Mirrorless & Macro

Text and photos by Don Silcock

In this article, the fourth in the series on mirrorless cameras, we will look at the potential of these cameras for macro underwater photography.

Underwater photography is undoubtedly a journey and one where the destination always seems to be just around the corner. For no sooner does it seem you may have finally mastered the art, than some new technology or concept appears, effectively moving that destination around the next corner!

Most underwater photographers start their personal journey with some form of macro set-up because it offers the cheapest and easiest way to achieve consistent results that are both sharp and properly exposed with vibrant eye-catching colors—which is usually when the bug really starts to bite.

Consistent results open the door to the finer points of underwater photography such as composition and isolating the subject, which really are the difference between a good photograph and a stunning one.

Defining macro

Macro means anything large in scale, scope or capability, but in the world of imaging, macro photography refers to extreme close-up photography, usually of very small subjects, in which the size of the subject in the photograph is equal to or greater than life size.

Life size means a ratio of 1:1 between the actual subject and how it appears in the image. It is this high magnification, combined with the minimal amount of light-absorbing water between the subject and the camera, which produces visually stunning images.

Some of the most vibrant colors to be observed underwater are found in macro photography, due to the dual effects of strong flash illumination and marginal color filtration.

In addition, a good macro lens will reveal details that are simply not visible to the naked eye, but are recorded on the image, adding to the overall visual impact.

Many underwater photographers never move past macro. Quite content searching dive sites for little critters, they are usually looking down, as that whale shark passes overhead.

Where to start?

High-end compact cameras such as Canon's S100/110 and Sony's RX100 in an underwater housing offer an excellent entry point into macro photography and quickly achieve results that will soon be hanging on your wall.

However, that bug bites deep. Over time, "gear lust" often sets in, resulting in a migration to a DSLR with a macro lens and a desire to create the professional quality images that the technology is capable of making.

Therein lies the problem; the compact camera was nice and small, but you want truly professional results. To get them, you have to use something that appears massive and unwieldy.

What if you had the potential for professional results, but it all came in a mid-sized package? Enter mirrorless cameras and housings.

The Golden Rule

Get close and then get closer is the oft-repeated mantra of macro photography. Doing so fills the frame and minimizes the

Macro shot of nudibranch

amount of water between the subject and camera.

To do so effectively requires a good macro lens. By far, the most popular ones are around the 100mm focal length, such as the Nikon 105mm and the Canon 100mm. Both are of stellar quality and coupled with a high end DSLR, produce stunning images.

However, the price you pay for that capability is a bulky housing that often intimidates both subject matter and user alike.

As we consider the much smaller mirrorless cameras and their excellent functionality, the real question to be answered is the availability of lenses to match the performance of the Nikon and Canon flagships.

Mirrorless macro lenses

As explained in previous articles, there are currently only two real choices when considering a mirrorless camera for underwater photography: the Sony NEX range or the Micro Four Thirds format from the Panasonic and Olympus alliance.

Sony is presently limited to one true macro lens: the 30mm f3.5, which is equivalent to a full-frame focal length of 48mm. Although its minimum focus distance is just 3.74 inches (9.5cm), it is not really the best choice for underwater macro photography, as it is too wide.

Sony's 18-55mm (27-82.5mm equivalent) kit-lens has a close-focus distance of 9.8 inches and is used by many NEX owners for their macro needs.

Over in the Micro Four Thirds stable, there are two excellent choices with the Panasonic-Leica 45mm (90mm equivalent) and the Olympus 60mm (120mm equivalent). Both lenses offer true macro capability with 1:1 reproduction ratios, bright f2.8 maximum apertures, high quality glass and excellent close-focus distances of 6 inches for the 45mm and 7.4 inches for the 60mm.

Sony 30mm lens

It was the availability of these two lenses that convinced me to opt for the Micro Four Thirds standard when I was deciding which mirrorless system to use underwater.

Assembling a mirrorless macro system

My decision to "invest" in a mirrorless system was driven by wanting to have a second camera rig dedicated to macro photography, which could also serve as an emergency back up for my new D800 DSLR based wide-angle rig.

For me there was only one real choice—the Olympus OMD complete with the Olympus 60mm and the Panasonic 8mm fish-eye lens for wide-angle back up. Unfortunately, my budget would not stretch to include the Panasonic-Leica 45mm macro lens, but it is the next cab off the rank when my bank balance is restored.

To house the camera, there was also only one real choice with Nauticam's OMD housing, ticking all the right boxes with its small form factor, excellent functionality and, most importantly, a dedicated port for the Panasonic 45mm that can also be used with the Olympus 60mm by adding a 20mm extension ring.

In another nice touch, the port features a 67mm thread, allowing external wet diopters to be screwed directly on to the port's end without having to use an adaptor.

One of the apparent advantages of mirrorless cameras for underwater photography is the ability to use their large LCD display to compose the image. I was personally undecided about this, as I am a firm believer in using a 45 degree viewfinder so that the image can be composed from the lowest possible per-

Olympus OMD with 60mm macro lens

Macro shot of crab

Lure, full frame, Olympus 60

spective and you "shoot upwards" to isolate the main subject as much as possible.

So, I decided on installing Nauticam's excellent 45-degree viewfinder, which added significantly to the overall cost but I considered it justified. Time will tell if it was the right decision.

The Nauticam housing uses fibre-optic strobe cables, which requires the small external Olympus flash supplied with the OMD to be installed on the camera to trigger the strobes. This meant that I was able to use my Inon 240 strobe and its STTL capability.

Underwater testing

To say that I was keen to try out the new macro rig would be somewhat of an understatement. I had planned to spend a weekend up on the north coast of Bali, where I now live, testing it at the Puri Jati and Secret Bay critter sites.

The plan was to get some real world macro and super-macro images for inclusion with this article, but that was before the "gentleman" in the seat behind me on the flight from Singapore dropped his duty free on my head, keeping me out of the water for three to four weeks on doctor's orders.

Magazine deadlines must be met, so as a substitute, I visited the local fishing tackle shop and purchased a nice, bright 4-inch-long lure to test the macro rig in the pool.

Lure, close up, Olympus 60

The exercise proved interesting, as it allowed me to back off and fill the frame to test both the 60mm lens and the STTL capability, both of which performed superbly on the very first shot. Then I moved in for a close-up of the lure's head and again the 60mm focused quickly and accurately and the STTL exposure was perfect.

Then, I noticed the tiny bug in an equally small bubble of air on the lure, and I moved in to the minimum focus distance of the 60mm to record it—again fast focus and perfect exposure.

Conclusion

Although I have yet to fully test my new macro rig, my initial impressions from the pool testing are very positive. The autofocus of the Olympus OMD and the 60mm macro lens is fast and accurate, the lens is tack sharp, and the STTL of the Inon 240 strobe is first class.

You will have to wait for my head to heal and the next installment of *X-Ray Mag* to see the real-world examples, but they are definitely coming! ■

Don Silcock is an underwater photographer and dive writer based in Sydney, Australia. Visit: ***Indopacficimages.com***

Lure, close up, Olympus 60

FAR RIGHT: Nauticam OMD macro rig

photo & video

Aquatica AD4 Housing

Canadian housing manufacturer Aquatica has announced the specifications and renderings of their new housing for the flagship Nikon D4 DSLR. The new AD4 housing has access to both the Fn and Pv buttons that are situated on the front of the camera body, a new smoother operating lens gear, a new camera tray that indexes with a push-tab and a left-hand lever that adjusts the camera's ISO. Aquatica has not provided any shipping dates for the AD4 as yet, but have confirmed a retail price of US$4,590.

10Bar Olympus EPL-5 Housing

Hong Kong based manufacturer 10Bar has announced the release of their new housing for the Olympus EPL-5 mirrorless camera. The new housing features all the usual 10Bar functionality and is priced at US$850, complete with a 17mm lens flat port. The semi-dome zoom port version of the housing retails for US$1,000.

Nauticam Canon EOS-M Housing

Nauticam has announced the release of their housing for the Canon EOS-M mirrorless camera. The Canon EOS-M uses a DSLR sensor which, with the soon-to-be-released adapter, allows the use of SF and EF-S lenses in addition to the dedicated EF-M lenses. The EOS-M's hybrid sensor allows for phase detection AF while video shooting, which enables live autofocus while recording—a huge bonus for underwater shooters. The Nauticam housing is designed so that Canon's Speedlite90EX flash can be mounted on the EOS-M's hotshoe and used to optically trigger strobes. In a nice touch, Nauticam has designed a port and focus gear that allow Canon's EF-S 60mm macro lens to be used with the EOS-M housing.

Gates Canon HF G-20 Camcorder Housing

Gates has announced its new housing for the Canon HF G20 consumer camcorder. The new housing supports the Canon Vixia HF G20, HF G10, XA10 and Legria HF G25 camcorders. A significant feature of the new housing is the large window that allows use of the built-in LCD monitor at wide viewing angles. The housing uses Gates' non-vignetting ports and an internal flip filter for natural light shooting color correction. It also allows all available battery sizes for the Canon camcorders to be used, which means less battery changes are required —reducing the number of times the housing has to be opened. The Gates HF G20 Housing is available now for US$3,170, which includes the housing and the GP32A Wide Angle Port.

Gates Sony F55 Housing

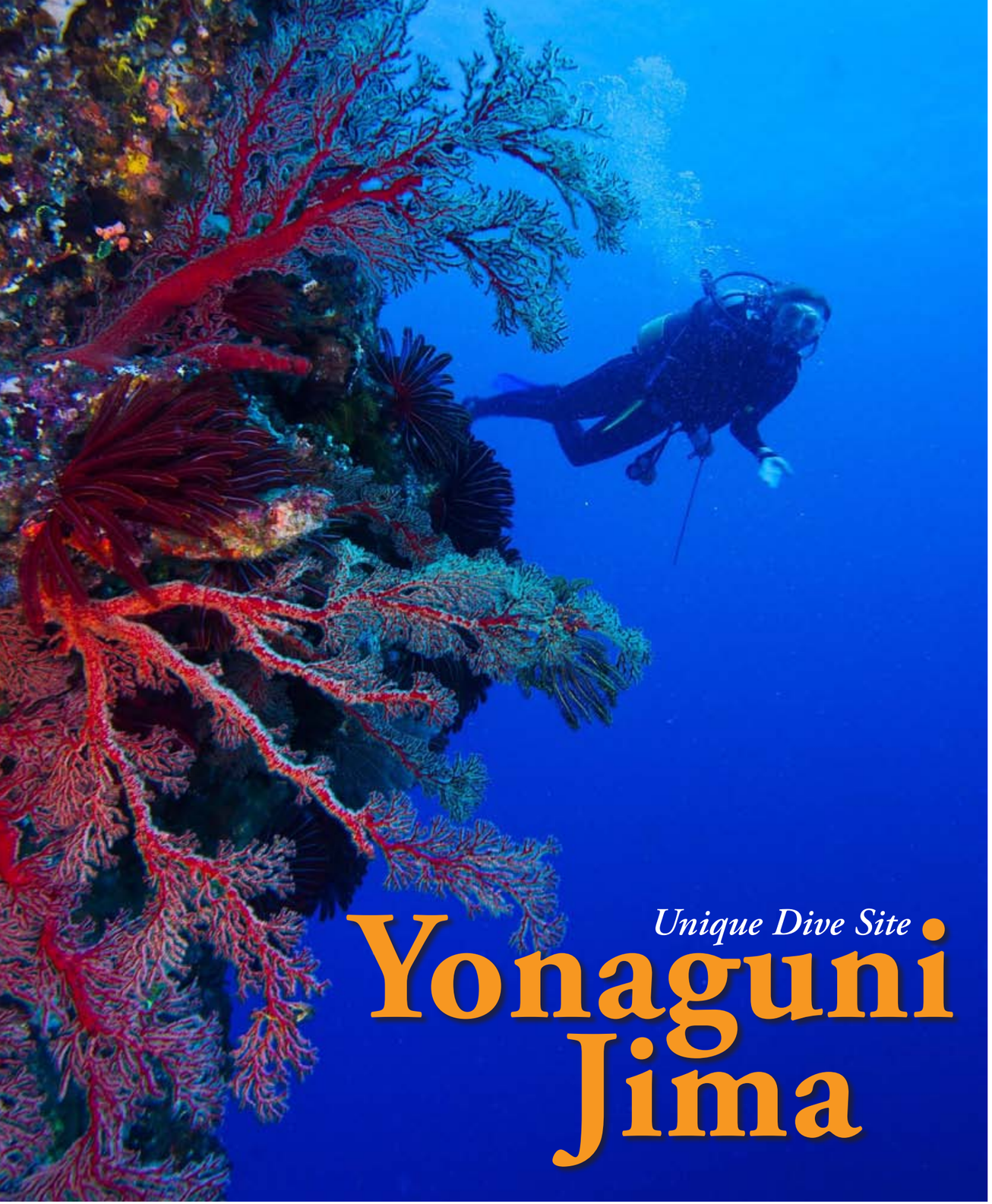
Gates has announced their new F55 housing for the Sony F5 and F55 CineAlta cameras. The new housing is machined from aluminum and supports a wide variety of Canon and PL mount lenses, plus it uses Gates Precision Ports, which provide vignette-free shooting. The Gates F55 housing, like all Gates Pro housings, feature the SealCheck Vacuum system to ensure seal integrity before entering the water. The new housing will also support the integrated RAW recorder or Sony, the AXSR5 and access to all camera functions. The F55 housing will be available from June 1 at US$18,000 for the housing, port and port rings.

Canon EOS 100D/ Rebel SL1

Canon has announced the world's smallest, lightest DSLR—the EOS 100D/ Rebel SL1. The SL1 shares the 18MP resolution, DIGIC 5 processor, 3-inch touchscreen and 1080p30 video capability of the EOS M, Canon's belated entry into the mirrorless camera space. The really small form factor of the SL1 is clearly designed to create a wedge between the burgeoning mirrorless cameras and DSLR's. Mirrorless cameras key selling point to date has been functionality close to that of a DSLR but without the size and weight. Now Canon has created a DSLR that is only slightly bigger than a mirrorless camera. Canon's engineers appear to have done a tremendous job shrinking all the internal components like the shutter mechanism, sensor modules and circuit boards, without impacting any of the DSLR functionality or quality. The EOS 100D/ Rebel SL1 has a recommended price of US$799.99.

Amphibico Genesis FS700 Housing

Canadian video housing manufacturer Amphibico has announced the release of its Genesis housing for the Sony NEX-FS700 camera. Image monitoring is available through the top-mounted window, and the Genesis FS700 housing will be compatible with a wide variety of Sony E-mount lenses. The housing also features a bayonet port lock system that is compatible with Aquatica ports. Amphibico states that the Genesis FS700 housing will be available in April at a U.S. retail price of $6,395.



Unique Dive Site

Yonaguni Jima

Japan is home to some excellent cool water diving in winter—currents, 21°C water, and rocky—but it is so worth the journey

Shota 2—the excellent, purpose-built dive boat of Sou Wes Dive Centre

—Lured by stories of schooling hammerhead sharks and a lost city submerged below the surface, Farhat Jah headed out on the long journey to Japan's westernmost island.

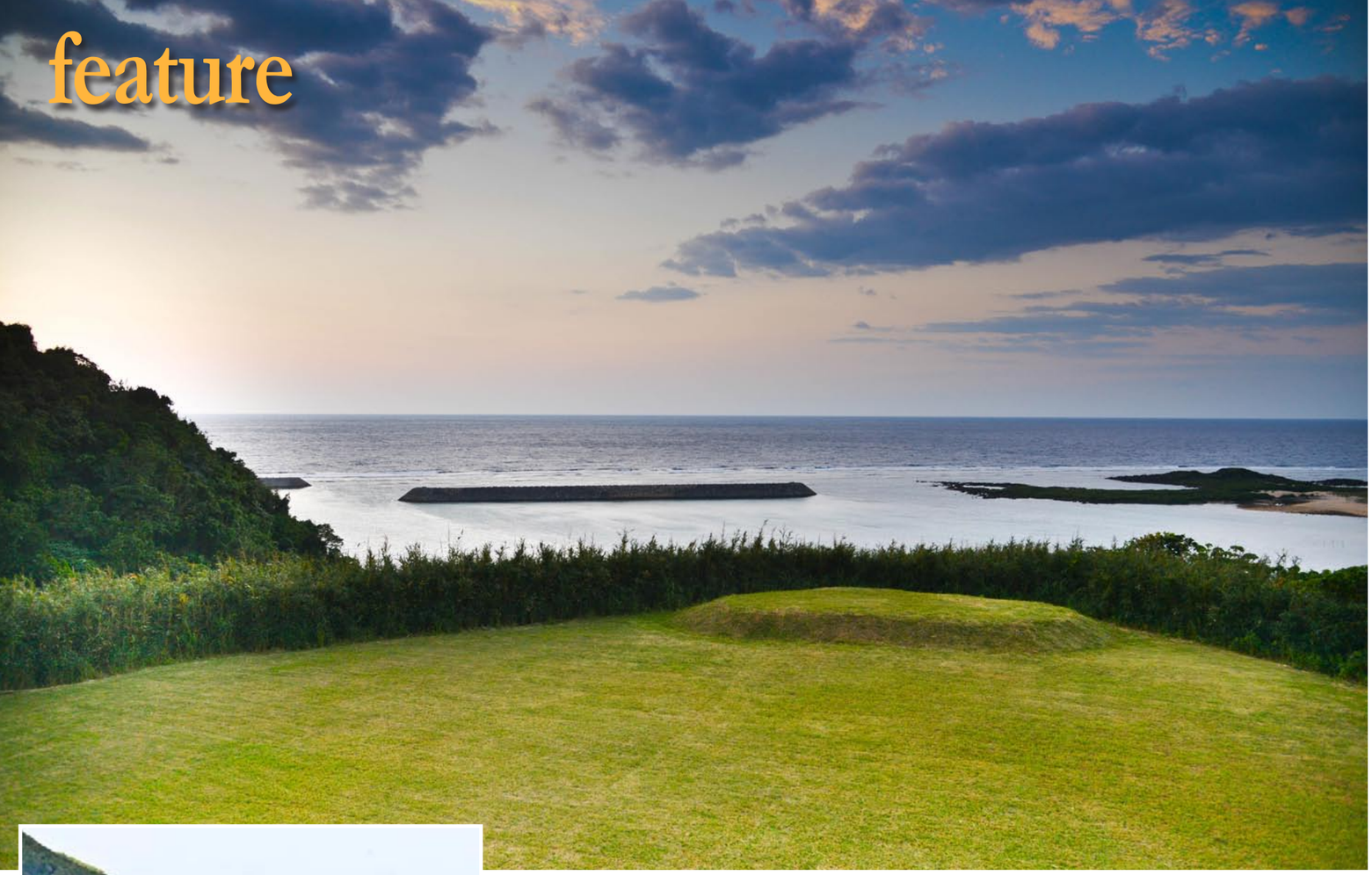
The sun rose on a small outcrop of rock in the Pacific Ocean. The sea was calm, but a steady roll of small waves slid up to the coast and then petered out on a seemingly invisible reef. The sun was warm but muted at this hour. A fishing boat motored slowly out of the tiny harbour and headed for the horizon. I looked out over the balcony and saw a cow chewing on grass in the garden. It was January and at 7:45 in the morning, the sun had just risen on Yonaguni Jima—Japan's forgotten isle.

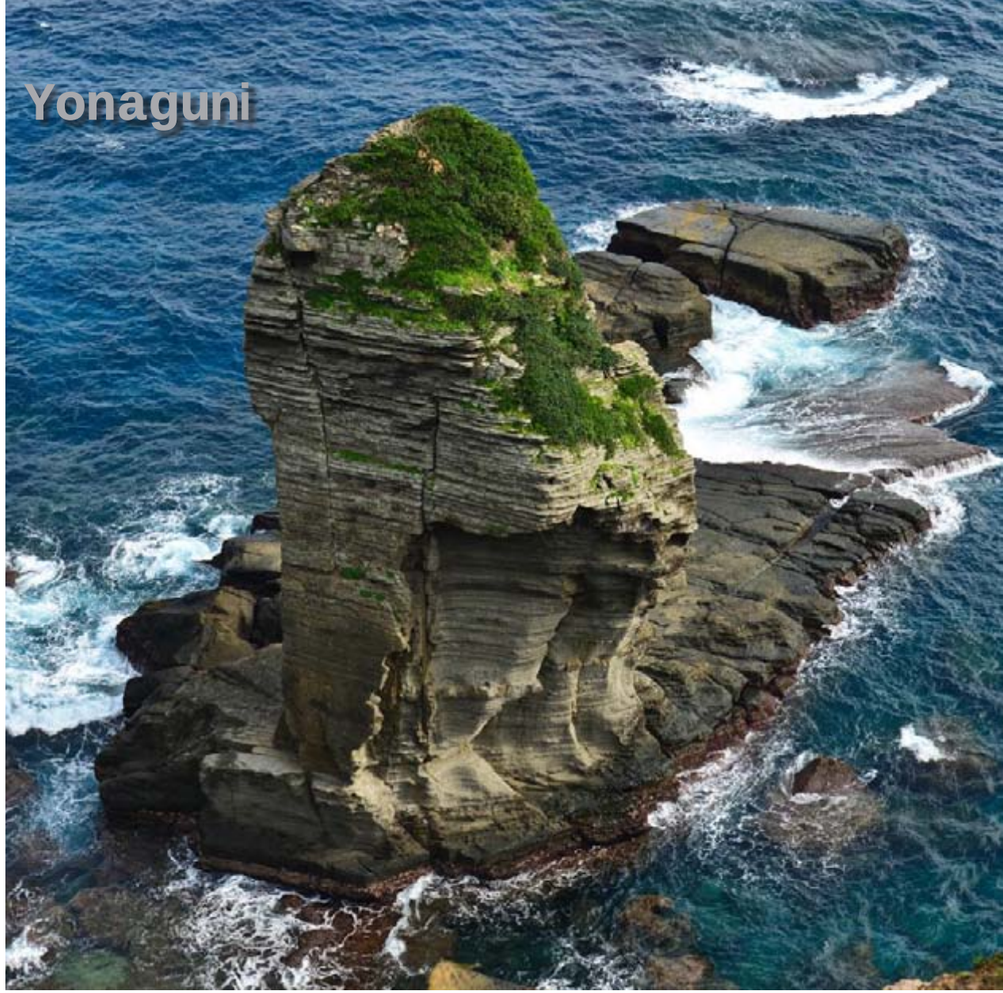
Text and photos by Farhat Jah

Yonaguni rose up out of the ocean floor. This was no coral atoll, it was a solid rock. One small town, two very small villages and two sheltered harbours made up the human addition to the island. It was cold, 16°C, and a gentle wind blew at all times over the rocks. The atmosphere was quite bucolic.

We were 60 miles from Taiwan, 1,800 miles from Tokyo and yet, due to the similarity in vegetation, I felt as though I was in Micronesia. Sugar cane and tropical scrub covered most of the land, while fields and the airstrip took up what remained. Rocky cliffs dominated the coast, punctuated by the most idyllic, white, sandy beaches with clearly visible coral bommies sitting in the shallow water. Best of al, not a person was to be seen anywhere.

We arrived in an old and greasy Canadian-made DASH 8 turboprop. After a low flight over





LEFT TO RIGHT: One of two tiny harbours on Yonaguni Island; Serene landscape and rugged rocks of Yonaguni coast; Lionfish on Yonaguni reef

water, the aircraft circled the island before lining up on the new runway. Passengers were treated to a view of the waves crashing relentlessly on the black cliffs. Winds gusting over the rock, made for an interesting landing.

We had come here to look for schooling hammerhead sharks and to see the ruins at Iseki Point. The whole expedition rested upon two people: Douglas Bennett, a 42-year-old ex-U.S. Marine who runs Reef Encounters 300 miles away on Okinawa; and Kihatchiro Aratake, the 65-year-old owner of Sou Wes Dive Centre and director of the Yonaguni Tourism Association.

We loaded up a rusty Toyota minibus and trundle along the road to one of the two tiny harbours. The dive master carried some of the kit down. Rather than watch him, we pitched in and carried extra tanks, BDC's and general bits. I was getting the impression that the Japanese way of doing dive things is a little different to the western world. I needed to borrow a BCD and was given an old Sea Quest that had not been made for 15 years and was a size or two too small. Regardless, it went on, and I could just get the clips done up—perfect. I smiled to myself at the thought of what some less flexible diver might have thought.

Diving

Kihatchiro piloted his own boat. Stricken with polio, he dropped his crutches and nimbly disappeared up into the bridge of a 50ft metal hard boat made in Taiwan. We put our own kit together. This is Japanese style diving. It's a bit like a British dive club renting a boat but with no one who can speak English.

At Iseki Point, Doug briefed us: "Move away from the boat as soon as you can go down and move away." He gave me the choice of a backward roll down two metres or a giant stride. Like a fool I choose the giant stride, the precarious jump into the water was done avoiding the three ladders that hung off the stern. Cisca had short legs and cleared hers by six inches. I needed a camera. Unfamiliar with the system I wondered what to do when Doug came to my rescue.

"I'll take it," he said. And when I took a giant stride in, he merely rolled in backwards and took the pressure of the water on his back. "I could have done that," I muttered, as we submerged below the surface.

Divers explore the upper terrace at Iseki Point (above), at 30ft (right)

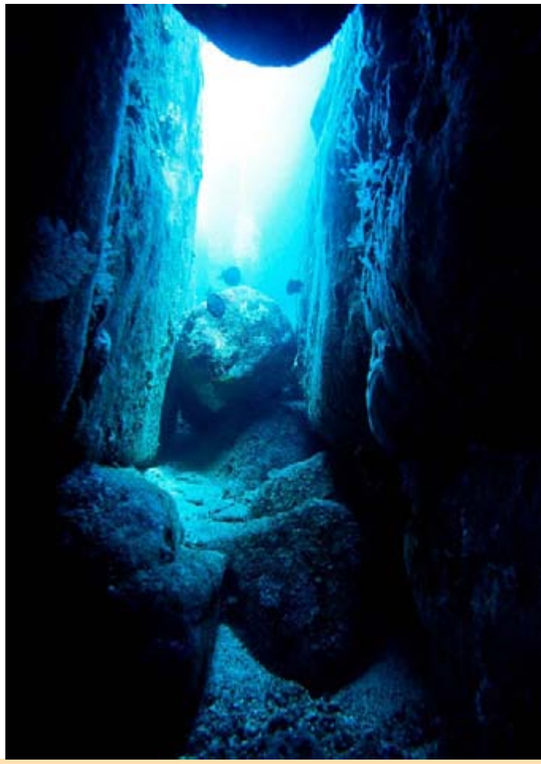
THIS PAGE: Scenes from Yonaguni diving

The cool 23°C water seeped slowly into the wetsuit. Doug handed me my Olympus OMD. It's as small as my G12 housing and actually lighter. I clipped it on, and we started to descend.

Cisca's Suunto dive computer turned on and then died. Needless to say, she was not overly happy, but she's old school and always dives with her Momentum dive watch. She grimaced at me, as she twisted the bezel round and double checked her air and depth gauge. Day one of diving in Japan, and we really were back in the early 1990s!

The other divemaster, Takashi San, took off with his Japanese client, a quiet but delightful vet from Nagoya. Doug let him go and took us slowly forward along a rock wall towards a swim through. But this was no ordinary swim through; it consisted of blocks of stone placed here in an arch. We went through these and popped out into what looked like a street.

The rock was smooth and barely covered with algae. It differed from every other part of this island and had steps. I was bewildered, trying to take in a scene similar to the Mayan pyramids,



Detail of the steps of the Upper Terrace

Angelfish off Yonaguni Jima

but underwater. I twisted around and looked at the walls, steps and cut terraces.

A group of small fish sat on an anemone and a big angel fish came up to us, said hello and wandered off. We came to a dead end, turned around and went around a corner at 67ft.

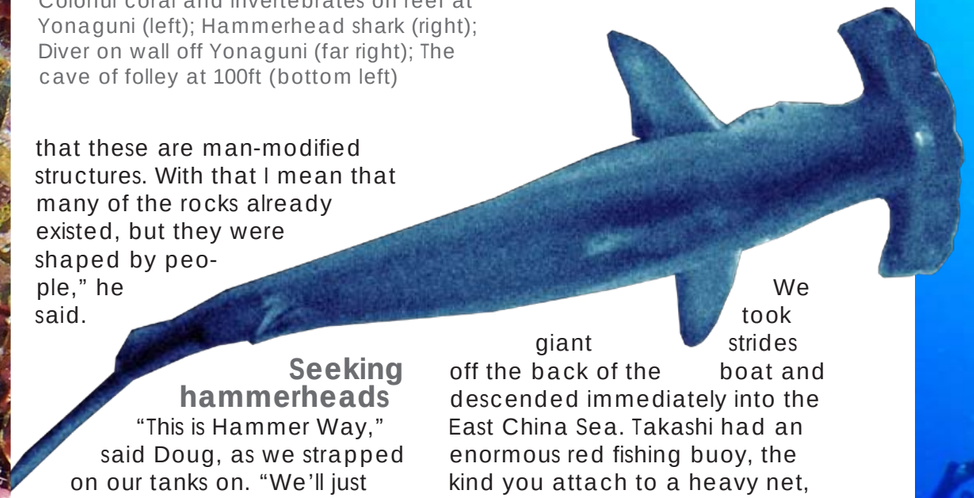
The current picked up, exactly as Doug said it would, and I flew along. I wanted to descend, but Doug motioned to me urgently to come up and round to him. I did as instructed. Just then, we were all caught in a surge of sea and sped down the wall together! Had I carried on, I wouldn't have made it back. We ended up on what the divers call the Upper Terrace—the top of the man-made structures.

The carved steps gave a dramatic backdrop to the entire scene, but soon enough, our air was running low and it was time to surface. As my hand broke the surface, the cool January wind met it, and I momentarily contemplated staying under the surface. But surface we had to do and moments later, we were sitting in the comfortable "wet cabin" of the vessel.

A healthy wind blew over the sea making for a chop. Takashi produced some gorgeous spiced green tea, and we all sipped away at this, while Kihachiro motored slowly to the middle of the sea.

Lots of nudibranchs can be found at Yonaguni

Colorful coral and invertebrates on reef at Yonaguni (left); Hammerhead shark (right); Diver on wall off Yonaguni (far right); The cave of folley at 100ft (bottom left)



"Are you sure these sites are real?" I asked Doug, as the tea slid down and warmed my insides.

"Some people say that this is natural," he explains laconically, "but you saw where there were piles of rock. That rock came from the other side of the island. The lines, the steps, the carving... I definitely believe that these are man-modified structures. With that I mean that many of the rocks already existed, but they were shaped by people," he said.

Seeking hammerheads

"This is Hammer Way," said Doug, as we strapped on our tanks on. "We'll just cruise around in the currents and see if we can find some hammerheads. We may not, so get ready for 40 minutes of blue."

We took giant strides off the back of the boat and descended immediately into the East China Sea. Takashi had an enormous red fishing buoy, the kind you attach to a heavy net, which he dragged behind him on a reel of thick rope.

I looked everywhere and could see nothing but blue. In order to avoid becoming disorientated, I alternated between looking at Takashi the vet, Doug, Cisca and the surface. We swam lazily, in a box-like search. It really was blue. I clutched OMD and my wondered what this meeting would be like.

Twenty minutes later, I glanced at my dive watch and gauges for the umpteenth time. The minute hand was going around inexorably against the bezel, and my air was moving in the opposite direction with equal strength. In addition to these concerns, all I had seen so far was loads of blue. Just then, we saw a shape, a shadow... It was the bottom.

We had dropped to 60ft, and at 160ft, sand and rock seemed to combine. At least now I had something to look at. We followed the rocks and continued our now linear search. One of the rocks moved.

"Hang on," I uttered into my reg. "Rocks do not move."

I peered down again, released the smallest amount of air from my BCD and looked again. The

Detail of soft coral on reef at Yonaguni; Hammerhead shark (right)

Colourful fans abound all over Yonaguni

Yonaguni Jima is full of nudibraches

rock was a very slow moving and rather giant 18ft hammerhead.

I fumbled with the OMD, and swam a bit deeper. I checked my air and saw that I had enough, and dropped again. The clip on the OMD finally came undone, and I fired. Snap, snap, snap—the camera shutter fired repeatedly, as three, no, now four enormous hammerhead sharks swirled below us.

One of them turned towards me and gently swam upwards. Separated from the animal by my camera, I felt no worry, until I looked over the top of the camera and saw it in its full girth. Now I felt extremely worried. I was 90ft down. But the shark turned and wandered off.

I needed to make sure I maintained my depth and inflated my BCD. Doug was down with me. Cisca was even further below me, but we kept shooting. And then, after multiple circles and passes and as quietly as they had arrived, the hammerheads were gone.

Thankfully, their departure coincided with the needle on my pressure gauge getting to the red line. I sent up my surface marker buoy and climbed slowly back up the line to the surface and my safety stop.

Vibrant diving

There was more to Yonaguni than seasonal hammerhead sharks and the ruins at Iseki

Sponges and soft coral decorate reef

Divers cross from one ruin to another; Yonaguni island, the lighthouse represents the westernmost point of Japan (top right)

Point. The next few days saw us diving on steep walls covered with hard coral, brittle stars and sea fans, and then, under the most enormous boulders.

Yonaguni seemed to be a rock with a pile of boulders dropped around it. We were not inundated with schools of snapper, but below the bounders, in semi caves, fat grouper and some blue fin trevally sat waiting for their food.

Yonaguni was a place to watch your dive computer; the cold, clear water was deceptive. Being under a boulder at 90ft, snapping away at the nudibranches felt like 30ft.

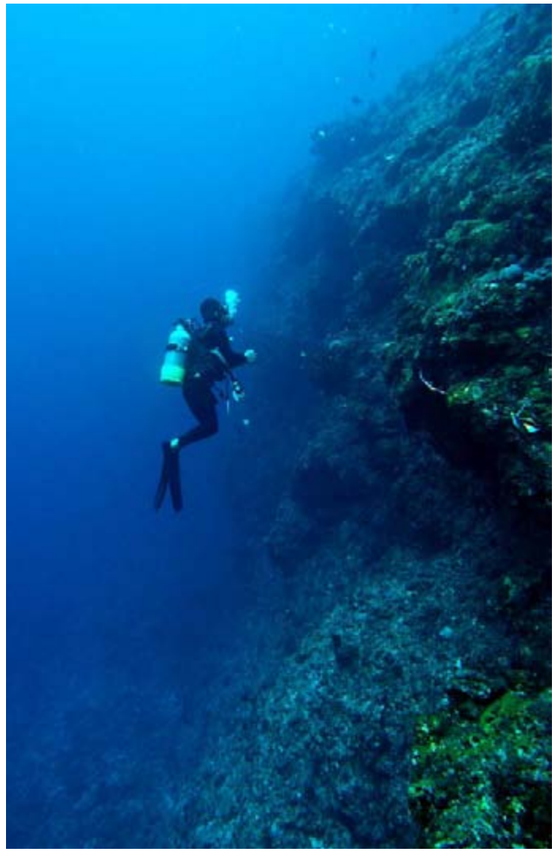
The diving in Yonaguni was exciting. The waves were big. The surge was powerful and felt at depth. But the water was clear, and the underwater landscape was dramatic and colourful. The marine life was also vibrant.

Afterthoughts

On the evening before the turboprop flight to Okinawa, Kihatchiro drove us to the westernmost point (and almost the southernmost) of Japan. A lighthouse dominated the high cliffs, while a wild horse chewed at the shrubbery.

The sun sets here later than any other part of Japan. We stared out over the East China Sea. The sun was lower, and we strained our eyes to see the peaks of Taiwan. We saw a shape, but it moved—it was a large freighter in the sea lane steaming north to the home islands. The wind blew and the horse moved along the hedge. Yonaguni Jima was truly unique, and I started to regret our impending departure. ■

Farhat Jah is an underwater photographer based in Pemba, Tanzania. He leads specialist bush walking safaris and operates a dive resort on the island of Pemba. See: ***www.swahilidivers.com***



Yonaguni Jima has impressive walls; A two-propeller plane transports visitors to and from Yonaguni (left)

Location of Yonaguni Jima on global and regional maps

Amanda Brisbane

P O R T F O L I O

PREVIOUS PAGE: *Blue Wave Sculpture*, by Amanda Brisbane. Sand cast glass, 40cm
BELOW: *Blue Lagoon*, by Amanda Brisbane. Sand cast glass, 38cm

Amanda Brisbane

Text edited by Gunild Symes
Photos courtesy of Amanda Brisbane

Inspired by nature, the sea, the waves, the water itself, British artist Amanda Brisbane creates stunning, one-of-a-kind glass sculptures and vessels with a unique glass-making process working with sand. The results capture the fluidity and motion of water frozen in time.

X-RAY MAG: Tell us about your artwork and how you developed your artistic process in connection with themes of the sea and the underwater world.

AB: The process I use is sand casting, which allows me to make negative patterns and designs in the sand using textured items. Shells have a wonderful form, so we developed a range of Seaform vessels using decorative shells as impressions into the sand mould.

X-RAY MAG: What about the sea and its creatures inspires you?

AB: Nature is a great informer. The colours and textures of the sea and shells give me much inspiration. The fluidity of the ocean and colours are reflected in my work. The molten glass takes on a natural feeling of water when poured.

X-RAY MAG: What is your artistic mission or vision?

AB: To create one-off, beautiful art glass sculptures, pushing the boundaries of

Coral Lagoon, by Amanda Brisbane. Sand cast glass, 36cm

portfolio

Spiral Seaform, by Amanda Brisbane Sand cast glass, 40cm

Olive Coral Fan, by Amanda Brisbane Sand cast glass, 38cm

the material and the technique to its limit.

X-RAY MAG: Are you a scuba diver? If not, what sources do you use to inspire or inform your art works related to the underwater world?

AB: I do not dive, but I snorkel. My inspiration comes from travelling, reading books about the ocean, and visual pictures taken by others.

X-RAY MAG: Who are your favorite photographers whose works speak to you?

AB: The books I have been inspired by are *Light In the Sea* by David Doubilet and *The Earth from the Air* by Yann Arthus-Berrand.

X-RAY MAG: What are your favorite dive sites, underwater subjects, locations?

AB: Any coral rich seas. The Caribbean and Egypt are two places that have given me sources of visual delight.

X-RAY MAG: What locations in the Caribbean and the Red Sea/Egypt have you

Aqua Frozen Water, by Amanda Brisbane. Sand cast glass, 35cm

Seaform Pink and Black, by Amanda Brisbane. Sand cast glass, 40x18cm

Swimming Fish Vessel, by Amanda Brisbane. Sand cast glass, 38cm

Brisbane

travelled to and what attracts you about the coral reefs?

AB: Shark-El-Sheikh [Egypt] was a rich snorkelling place to view colours under the sea. Jamaica and its reefs also provide a wonderful colourful source. The coral forms and variety of fish seen are all a great inspiration to me.

X-RAY MAG: Please give us insight into how an idea becomes a beautiful Seaform vessel. Is there control from start to finish, or do happy accidents happen along the way that help shape the work?

AB: The sea forms are made by building up a textured design in the sand with shells and other natural textures, never knowing exactly how the pieces will turn out, as we let the glass take on its own form as it is slumped and pulled. We have a very short window of time before the glass hardens, therefore each piece is a one-off. Many happy accidents arise.

Sea Bed Seaform, by Amanda Brisbane. Sand cast glass, 38cm

Toazaz Seaform, by Amanda Brisbane. Sand cast glass, 40x18cm

X-RAY MAG: Can you tell us about your fish sculptures. How did you came up with the idea and what was your inspiration or intention in creating them?

portfolio

Amanda Brisbane

X-RAY MAG: How do you mean "unusual"? Do you mean it is unique in method or that it is different from conventional glass-making processes? How is it different?

AB: The technique I use is unusual, as I cast the glass into a sand mould as a flat sheet with the textures made in the sand, then pick the glass up while it is still hot and fluid. We pull and stretch the piece and let it move by itself as it hardens. My work is very recognisable, as most sand casters make solid blocks of glass. When I cast, I essentially "draw" with the hot molten glass.

X-RAY MAG: What else do you want to tell our readers?

AB: My web site is constantly updated with new designs and information on where my work can be found. We take on many private and public commissions.

ABOVE: *Tropical Gar*, by Amanda Brisbane. Sand cast glass, 35x38cm
LEFT: *Mango Fish*, by Amanda Brisbane. Sand cast glass, 35x38cm
BELOW: *Pink Spotted Fish*, by Amanda Brisbane
Sand cast glass, 35x38cm

AB: The fish sculptures came about from a commission I did for Royal Caribbean cruise lines back in 1990—Monarch of the Seas. The fish I make are colourful and fun, trying to capture the exotic shades they display.

X-RAY MAG: In the creation of your glass pieces, what materials do you use and how do you prepare them?

AB: I make all my own glass from raw materials, therefore totally in control of the way the glass behaves. And with oxides, I can colour the glass at the source, making each piece unique. Each piece is signed. The technique and way I work is very unusual.

ABOVE: *Underwater Fantasy Vessel*, by Amanda Brisbane
Sand cast glass, 42x16cm

For more information or to purchase or commission art works directly from the artist, please visit: ***Amandabrisbaneglass.com*** ■