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POINT & CLICK ON BOLD LINKS



Equipment



Edited by Rosemary 'Roz' E. Lunn



Aqualite Eled

The U.K. Aqualite eLED is a small format video light. It is capable of producing up to 600 lumens at a 90° angle, making it a useful light source for wide-angle or fisheye type cameras such as GoPro and the Intova SP1. The batteries provide useful burn times: 600 lumens / 1.3 hours, 340 lumens / 2.3 hours, 220 lumens / 4.2 hours and 115 lumens / 8.8 hours. Other features include double o-rings on the front and back rotary seals, anodized machined aluminum power head and rotary switch, high impact ABS anti-corrosion body and stainless steel thread attachments.

Uwkinetics.com

W4

Waterproof has augmented their signature anatomical wetsuit range with the launch of the eye-catching 'W4'. This high quality gender specific cut suit replaces the W2, and is available in both 5mm and 7mm. It is no surprise that the W4 is a bit of a stunner. Waterproof has earned a much deserved reputation for their thorough research, design and attention to detail. We don't think the W4 will disappoint. Benefits include double seals, moulded rubber kneepads, Wave Flex panels in the hollow of arms and legs, 10mm spinepad and a comfort neck zip. It also has computer anchor straps built into each wrist—simply thread your strap through to secure against the anti-slip surface.

Waterproof.eu



Aeris Jetpack BCD

This game changing one-size-fits-all fully functional back inflated BCD was designed with the future dive traveller in mind. The Aeris Jetpack morphs into an airplane hand luggage, adventure-style backpack, thus saving you the agony of lost luggage and checked baggage fees. Simply mate the 42-litre travel bag with the Jetpack BCD, and you create a bag capable of carrying your regulator, mask, fins, snorkel, wetsuit, toiletries, swimwear, diving qualifications, flip flops and cuddly toy. Once in resort, you simply unzip the bag and dive the 1,000 Denier Cordura BCD. It has 30lb of lift and comes with a unique completely adjustable harness system and dumpable weight pockets. CleverAeris.com

Leonardo

The Leonardo is Cressi's first take at designing and making a computer entirely in-house. It has updated and cleaned up a basic classic concept and compact design. A hi-def screen with large numerical display makes all the essential information easy to read even at glance. The single button interface makes settings easy. It has modes for air, nitrox (up to 50%) and gauge. For the advanced divers it also comes with a PO2 alarm that can be set between 1.2 bar and 1.6 bar, a CNS oxygen toxicity graphic indicator and user-selectable Deep Stop function. Cressi.com



Aqua Lung Ava

Making a male glove smaller for female divers doesn't really work. Ladies have longer hands and narrower fingers, and the Ava glove from Aqua Lung's 'Details' collection has been cut accordingly, to give a better fit. It utilises thicker super stretchy neoprene on the back of the hand for warmth, whilst ensuring dexterity is retained because the palm has a thinner neoprene. These gloves come in two thicknesses 3 / 2mm and 6 / 4 mm. The longer tab on the back of the gloves makes donning and doffing a pleasure, and the rubberized palm and fingers provide decent grip. Aqualung.com



Red Sea Wrecks

Hurghada, Egypt

Diver on
wreck of the
SS *Carnatic*

Text and photos by Brandi Mueller

The Red Sea, its reputation precedes itself. The beautiful red-orange desert mountains stand over the unexpected and contrasting blues of the water. The calm and clear waters hide much below. Under the water is a rainbow of colors, and among the fish and corals, are the remains of many ships.

The Red Sea has been deceitful to many captains over time. The beautiful reefs that divers dream about here have also caused many a ship to meet its end. Sailors thought they were safe after clearing the challenging and narrow Suez Canal only to run aground or hit reef just outside the canal. Misjudgment and bad weather as well as numerous wars have laid the stage for the demise of many ships.

Although a popular dive location for Europeans, I (coming from the United States) knew very little about what I would find. I had always heard about its fantastic reputation and was excited to discover there were so many wrecks (which I happen to like very much).

Not only are there wrecks, but there are wrecks with really great stories behind them. Gold coins, wars, motorcycles and even toilets—who knew? I love nothing more than a good story and a good dive to create more diving stories to tell over a few drinks back on the boat. Lucky for me I had a week on Emperor Diver's MV *Superior* liveaboard and a fantastic group of Finnish and Irish dive buddies.

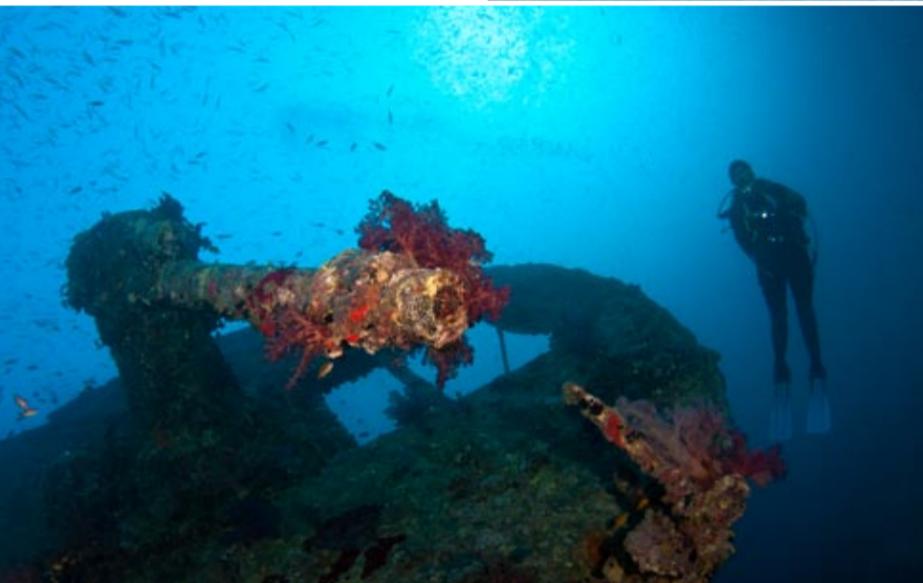
The hardest part was that there were so many wrecks with so much to see on



THIS PAGE:
Scenes
from the SS
Thistlegorm;
City of
Hurghada
(right)



Red Sea



each one. I wanted to dive them over and over again. The dive guides correctly assured me that the next one would be just as good, if not better.

Diving out of Hurghada in March, the water temperature, frosty 22°C (70°F) was a bit colder than I expected (I hadn't done my research before arriving). My first giveaway that the water would be chilly was when my boat mates were unpacking their drysuits!

Luckily the diving was so good that I didn't notice I was cold until the safety stop. With so much to look at and so many things to take photos of, I hardly had time to notice I couldn't feel my toes.

Diving the wrecks

SS *Thistlegorm*. The World War II British Supply Ship, *SS Thistlegorm*, had left Glasgow, England, on 2 June 1941 loaded with military supplies headed for Alexandria, Egypt. Due to German

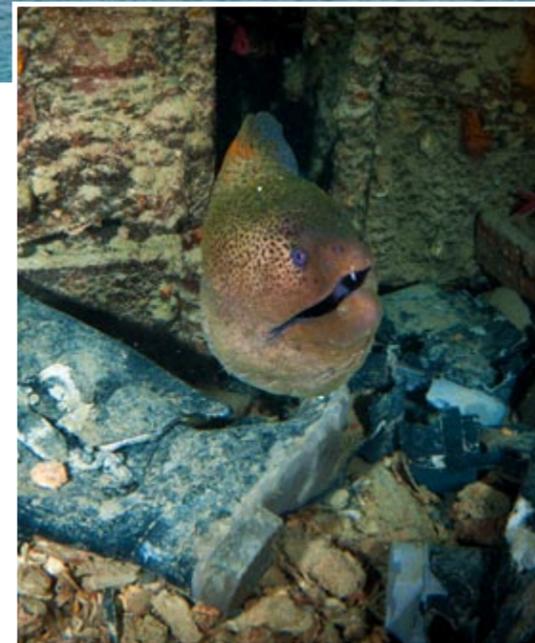
and Italian forces in the Mediterranean, she made the long trip around via Cape Town, South Africa, refueled and headed up through the Red Sea towards the Suez Canal.

Passage through the Suez was dependent

on how many other ships there were, enemy activity, and in the case of the

Thistlegorm, two ships had collided blocking the entrance of the canal, forcing her to wait before continuing. She was moored at Safe Anchorage F in September, awaiting the call to continue up the canal.

The *Thistlegorm* waited for two weeks and on October 6, in the middle of the night, two bombs were dropped on her, both hitting a hold with stored ammunition caus-



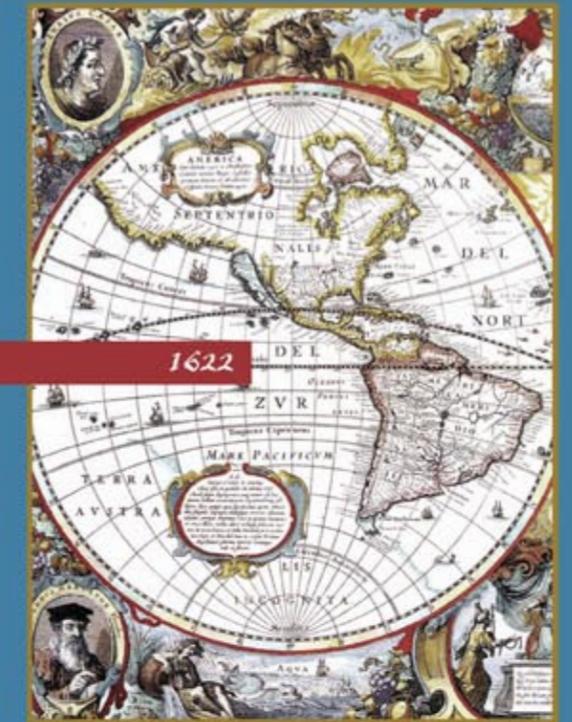
ing a huge explosion and sinking the ship. Two Heinkel He-111 aircraft had been dispatched by the Germans from Crete to find and destroy a rumored ship carrying 1,200 British troops, and these aircraft

were headed back after an unsuccessful hunt. They spotted the *Thistlegorm* at anchor in the moonlight and decided to release the unused bombs. The explosion almost tore the ship in two, and towards the stern, the ship seems to have peeled away leaving a distinct missing section of the ship.

While passing through Cape Town, the HMS *Carlisle* had joined the *Thistlegorm* and was anchored nearby also awaiting passage. The *Carlisle* rescued what crew it could, but nine of the 48 didn't survive.

Launched in 1940, the *Thistlegorm* was built as a steam, single screw cargo ship. She only had four voyages, the fourth being her last. Her completed journeys were to North America to bring back steel rails and aircraft parts, Argentina for grain, and the West In-

Treasure Coins of the *Nuestra Señora de Atocha* & the *Santa Margarita*



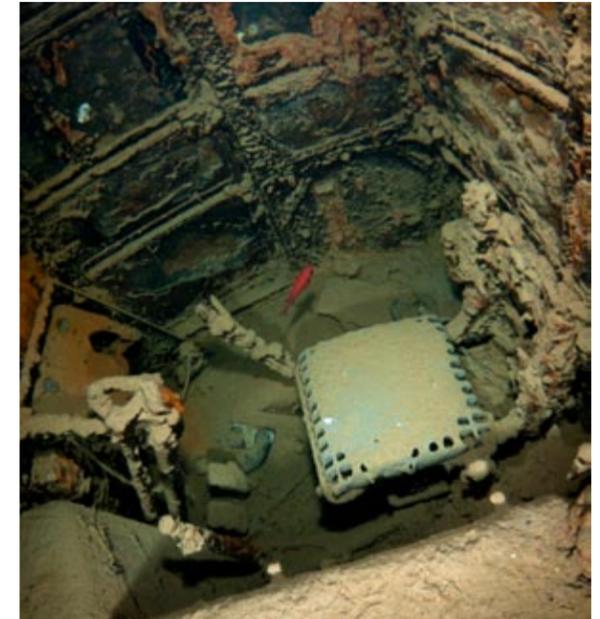
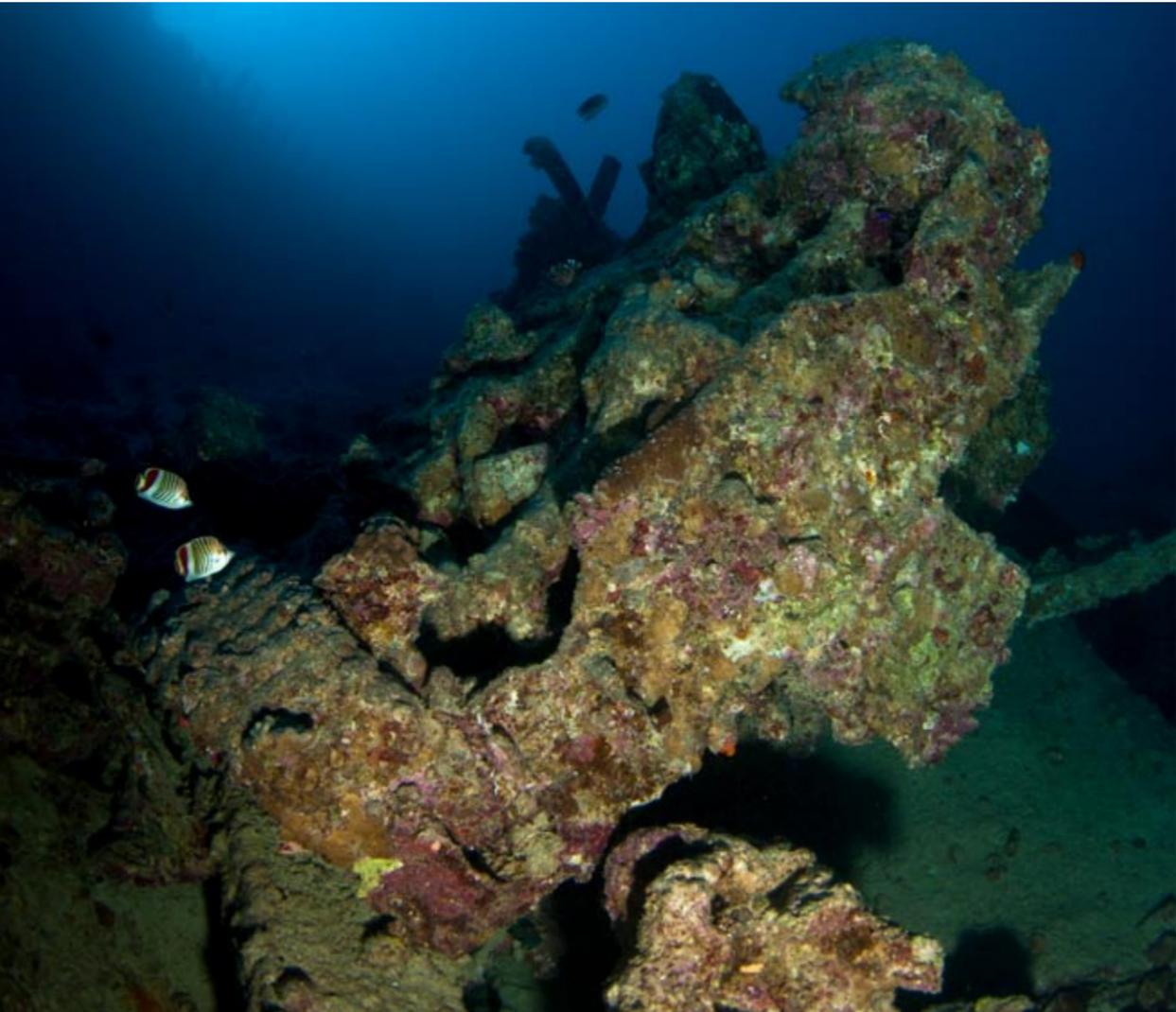
Carol Tedesco

In 40 succinct pages, *Treasure Coins of the Nuestra Señora de Atocha & the Santa Margarita* answers all the most frequently asked questions, including what the coins look like when first discovered, the meaning of the various markings, how they are cleaned, conserved and graded, what they were worth in the 17th century, and the most up-to-date information on the names and periods of office of the men who made them. Of particular interest to 1622 fleet coin enthusiasts is a section devoted to the exceedingly rare Old World minted coins discovered on the *Atocha* and the *Santa Margarita*.

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THIS PAGE: Scenes from the wreck of the *Thistlegorm*; Motorbikes stacked in the beds of trucks on deck (right)



bow and entered the interior of the ship to visit holds #1 and #2. The first thing I noticed inside the ship was motorbikes upon motorbikes stacked in the beds of trucks. Three bikes to each truck and with many of the trucks you could see through the roof of the cab to the driver's seat, clutch, pedals, and a few steering wheels.

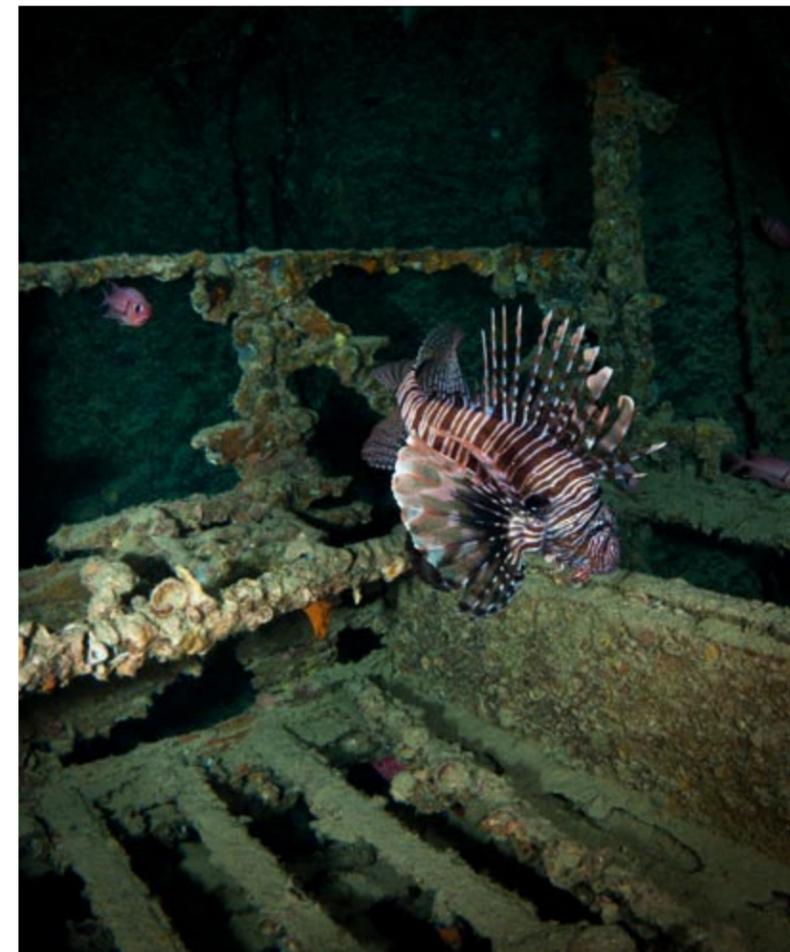
Continuing over the trucks there were stacks of tires in any extra space in front of and behind the trucks. Schools of squirrelfish seem to have made their homes in the 'tween decks of the ship, and they hovered above the trucks and motorbikes. A diver was waving his flashlight at me frantically summoning me over and pointed out a massive green moray eel coming out of a crack between a truck cab and bed. Upon closer inspection, the eel seemed to be guarding a Wellington boot.

The trucks and motorbikes seemed to never end, and in the back of

one truck, our dive guide pointed out a battery which divers had rubbed clean of algae to show its brand. It is stamped with "Lucas, 1941, Birmingham England, Lead Acid". Swimming through the holds, there is a lot of outside light and quite a few exits if one wants to get out of the ship.

On a second dive, we dove the outside of the wreck first visiting one of two LMS Stanier Class 8F steam locomotives, destined for Egyptian Railways, that had been carried on the deck of the ship. Both were hurled off the ship in the explosion, landing one on either side of the wreck. On our way back to the ship towards the stern, there was an upside down tank on which one could clearly make out the caterpillar tracks.

On the stern, the *Thistlegorm* was armed with a 120mm (4.7inch) anti-aircraft gun and a machine gun (the latter being attached after the construction of the ship). Both of these guns are still intact, the forward gun pointing toward the sea floor and the machine gun outward



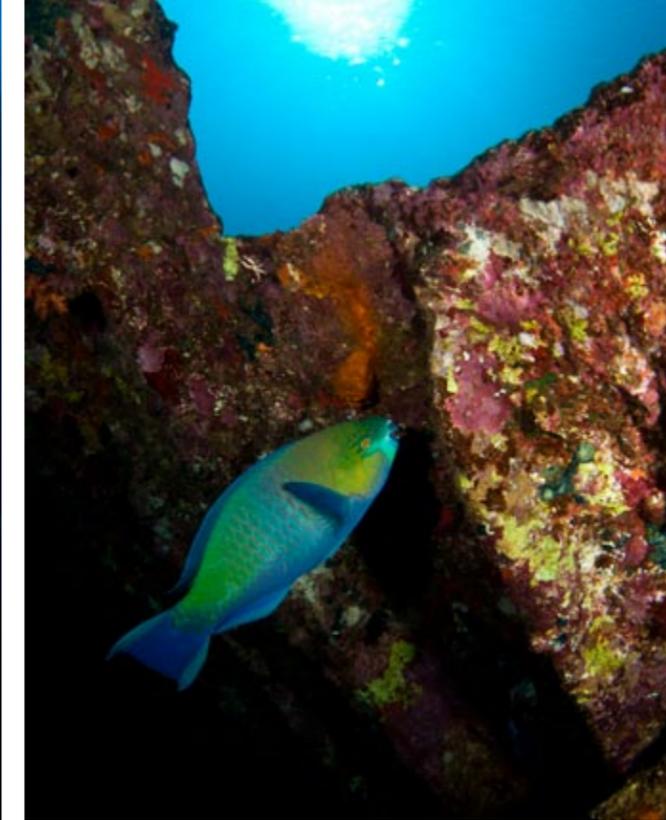
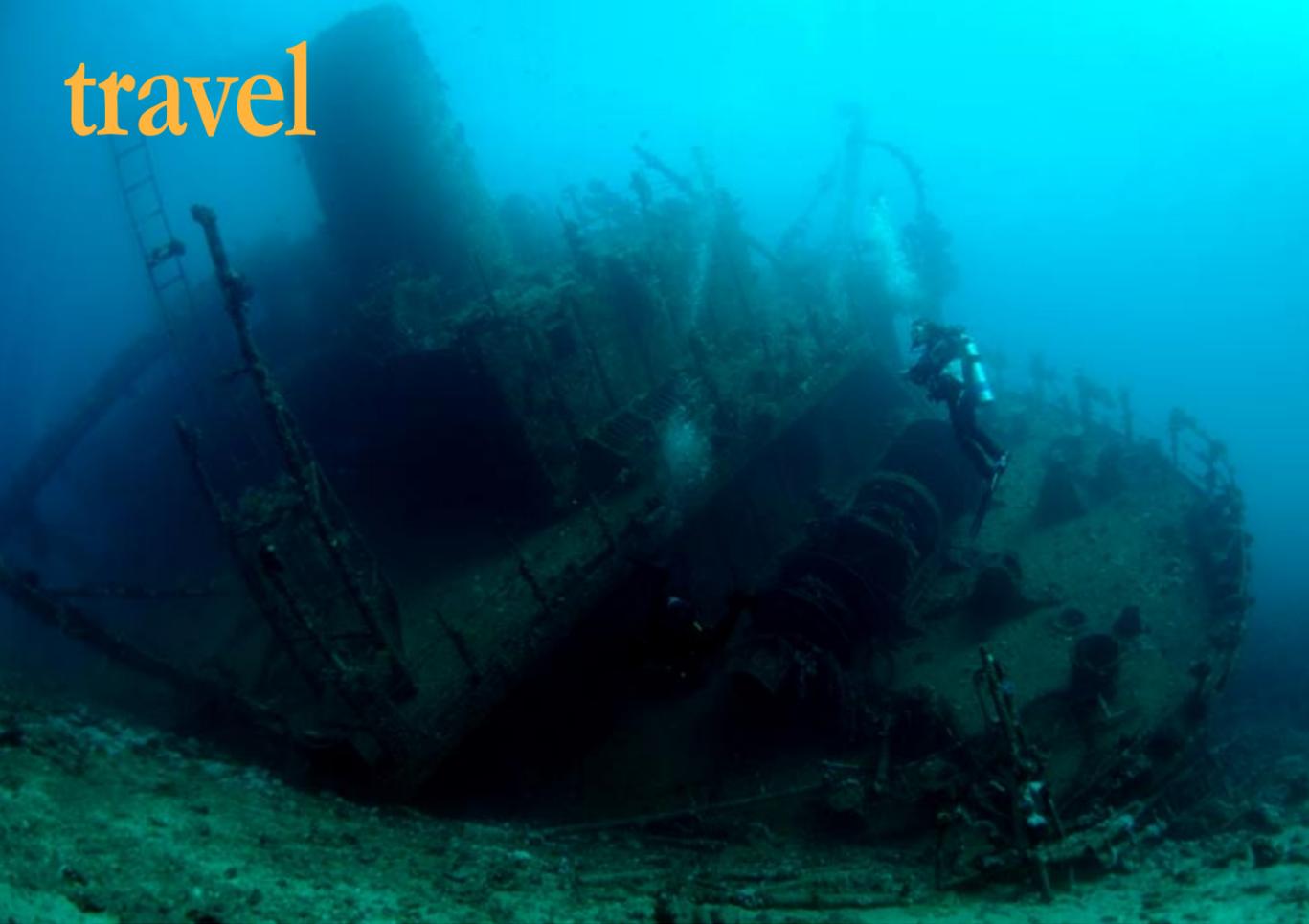
horizontally.

Aside from all the exciting artifacts and historical WWII relicts, the *Thistlegorm* is

dies for sugar and rum. To Alexandria she was carrying Bedford trucks, BSA 350 and Norton 16H motorbikes, boxes of rifles, aircraft parts, ammunition, tires, Wellington boots, torpedoes, tanks, two locomotives and other military supplies.

On our first dive there was some current, which is common, and we used a surface line to pull ourselves up to the bow mooring and decent line. We descended forward of the ship's bomb destruction towards the





teeming with marine life. We saw several crocodile fish lounging on the deck, the holds were filled with colorful reef fish, batfish patrolled the decks, and pink and orange anthias guarded the soft coral-covered winch.

The *Thistlegorm* is one of the most popular and most dived sites in the world, and it's easy to see why. The cargo it contains makes for an exciting treasure hunt with unsuspected war artifacts found around every corner. Its max depth is around 30m (100ft) making it easy for recreational divers and allowing for a fair amount of bottom time. Jacques Cousteau was the first to lo-

cate the wreck in 1956 using knowledge from local fisherman, but it was not found again and dove until the early 1990s.

Unfortunately, time and extensive use is taking its toll on the wreck. Rusting from more than 70 years in saltwater as well as many boats mooring directly to it in weak spots have caused collapses. Sadly,

many artifacts have been removed from the ship as well; Cousteau, himself, took a motorcycle, the captain's safe, and the ship's bell. Divers have removed many of the small objects such as steering wheels and parts of the motorcycles over time.

Even with the wreck pillagers and dive boats and saltwater taking its toll, the *Thistlegorm* is a fantastic wreck dive. Multiple dives are needed to see the majority of it, and even after many dives it would be tough to get bored. Liveboards frequent the dive site. Being close to Sharm el-Sheikh and Hurgada, day boats can easily get there.

Giannis D. Shab Abu Nuhas is a reef that is just below the surface near the Straits of Gobal, a very busy shipping lane. This hidden reef has been the demise of more than one ship. In fact, the wrecks of five ships can be dived off Shab Abu Nuhaus:

the *Giannis D*, the *Carnatic*, the *Chrisoula K*, the *Kimmon M*, and the *Marcus*.

The *Giannis D* had left the Croatian port of Rijeka in April 1983, carrying wood to Jeddah, Saudi Arabia, and continuing on to Hodeidah, Yemen. Having made it through the Suez Canal, the captain thought they were in the clear and

Scenes from the wreck of the SS *Carnatic* (above and left)

went to sleep, handing the vessel over to his officers and giving the orders of "full speed ahead". Shortly after, the ship hit the reef and sank.

Having originally been launched as the *Shoyo Maru* in 1969, the 99m (325ft) long and 16m (52ft) wide cargo vessel was built in Japan. She was sold and

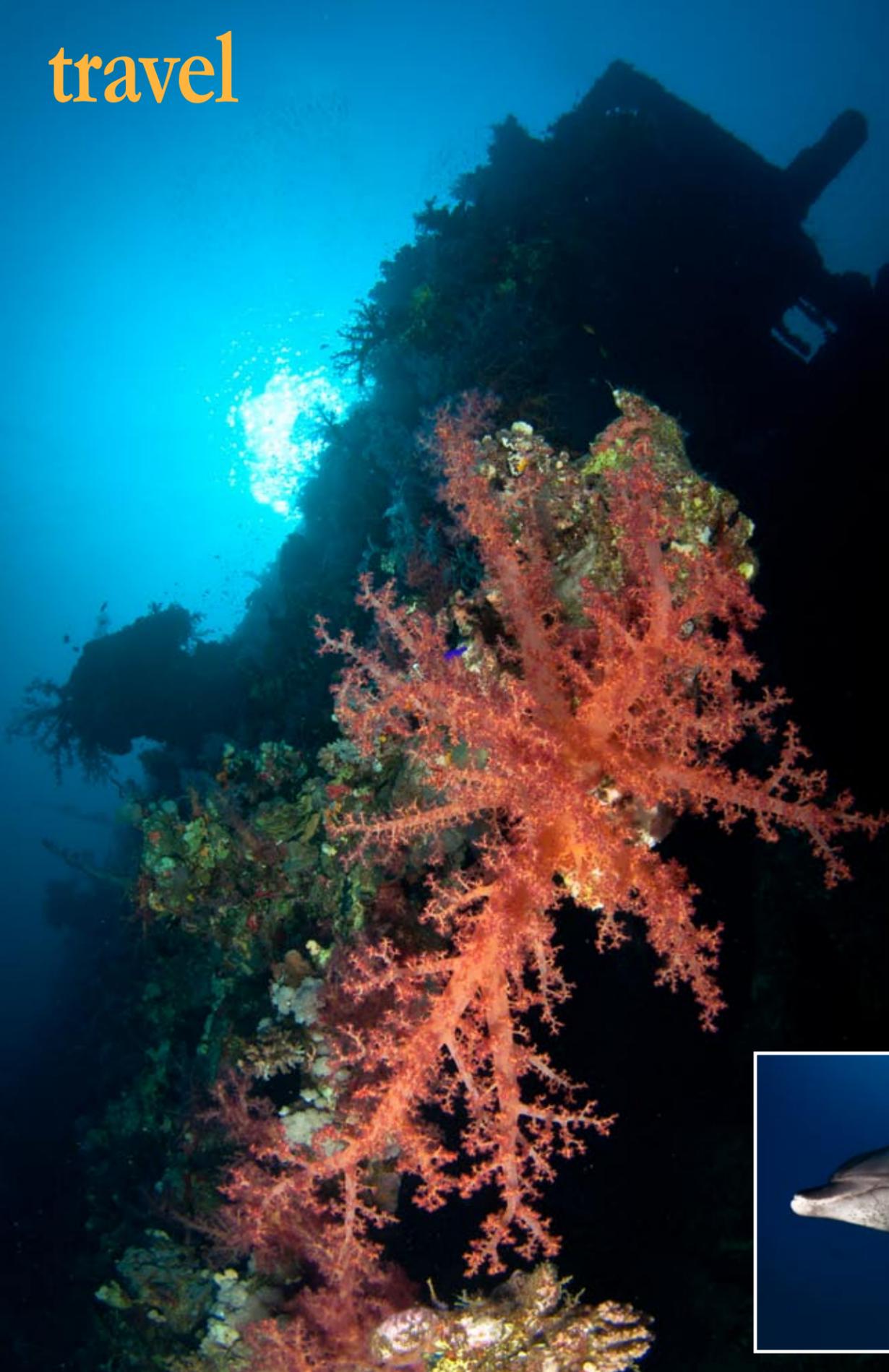


Scenes from the wreck of the *Giannis D* (right, top left and top center)

Historical image of the SS *Carnatic*



WIKIMEDIA COMMONS



Anthias on coral; Pair of chevron butterflyfish (right); Diver at *Carnatic* wreck site encounters wild dolphins (lower right)

renamed the *Marcos* in 1975, and sold again in 1980 to Dumarc Shipping and Trading Corporation and named the *Gianis* and *D* for Dumarc.

Sitting at a 45 degree angle on her port side between 6-27m (20-90ft) our dive guide took us through the interior of the stern. The slight tilt made it feel as if we were swimming through an underwater fun house. There isn't too much in the way of artifacts inside the ship, but the engine room is easily accessed with machinery, gauges, handles and levers still

intact.

The fish life is prolific with many species of reef fish calling the shipwreck home. A large mast extends horizontally from the ship and is covered with hard and soft corals. It appears to be its own little mini reef, and I saw emperor anglefish and parrotfish there. Hanging down from the mast are the original rigging lines, also growing pink soft corals. The collapsed midsection harbors batfish and crocodilefish.

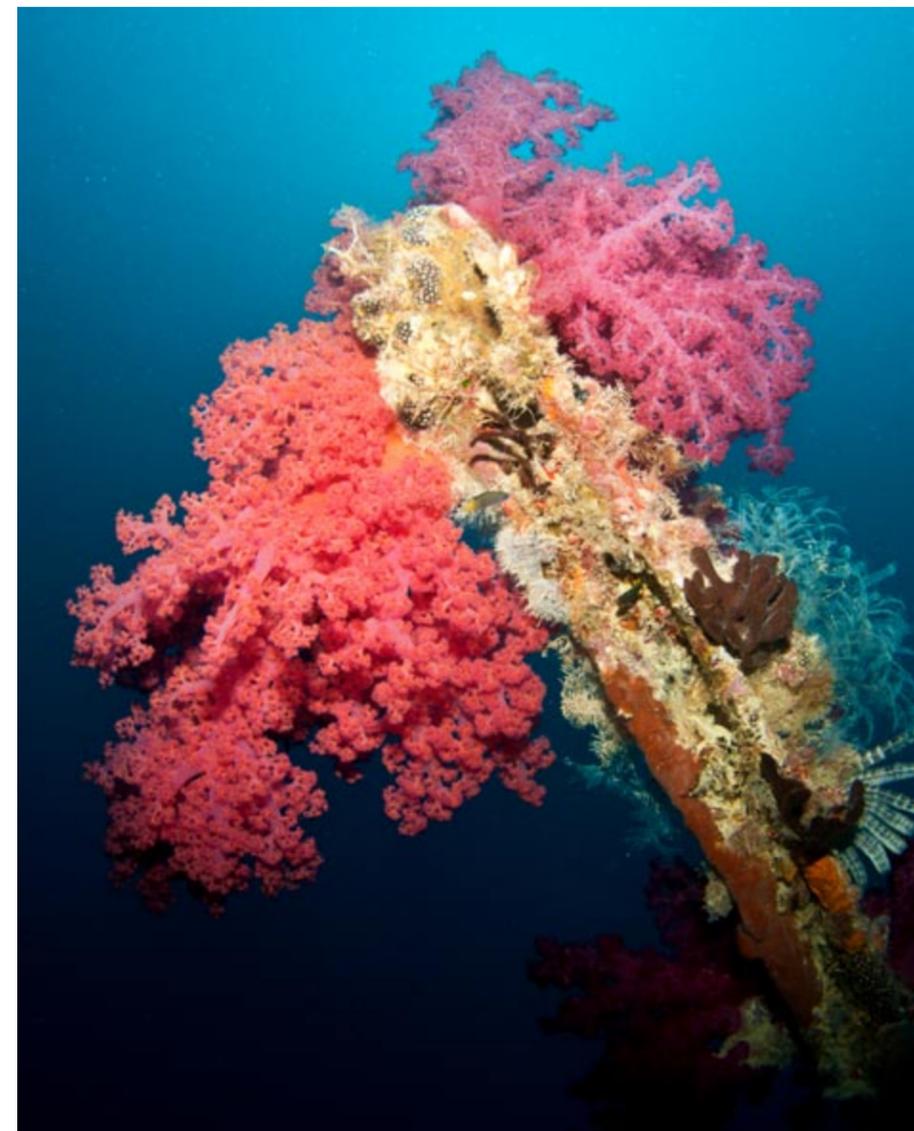
SS *Carnatic*. Another casualty of Shab Abu Nuhas reef, *SS Carnatic* was sailing to Bombay from Suez with 34 passengers and 176 crew, carrying cotton bales, copper sheeting, Royal Mail and



Curious dolphins at the *Carnatic* wreck site

GB£40,000 of gold coins. In the dark early hours of 16 September 1869, the ship hit Shab Abu Nuhas. Captain Jones assessed the damage and decided the ship was okay for the time being. He knew the P&O Liner *Sumatra* would be passing by soon. He decided to keep all passengers on board and continue business as usual

Lush coral growth on the wreck of the *SS Carnatic*



THIS PAGE: Scenes from the wreck of the *Rosalie Moller*; Glassfish (left)

until the *Sumatra* showed up to rescue them. Passengers were told not to worry and instead to prepare themselves for dinner.

Passengers asked the captain multiple times to take them to Shadwan Island some three miles away by lifeboat. All requests for transport were denied, as he kept hoping for the *Sumatra* to pass by. Becoming more persistent as time

went on, the captain finally gave the okay for passengers to be put into the lifeboat.

It had been a day and a half since they ran aground. As the first four passengers were being put in the lifeboat (woman and children first) the *Carnatic* suddenly broke in half. The aft section of the boat sank quickly with five passengers and 26 crew. Soon, the rest of the ship fell onto its

port side sending everyone into the water. With many heroic efforts, the remaining passengers were rescued and transported to Shadwan. Eventually, the *Sumatra* passed by and rescued those left.

Today, the wooden decks of the 90x12m (300x40ft) ship have rotted away leaving only the steel hull, with its iron supports and cross-members. The shallowest part of the ship is at 17m (55ft) and the deepest at 27m (88ft). It is lying on its port side.

The iron ribs were extensively draped with soft coral probably due to lots of water, nutrients and sunlight being able to pass through the beams. The bow area was packed full of glass fish, which hardly even tried to move out of the way when a diver swam through. Near the bow, dozens of small pipefish were free swimming just off the beams in search of breakfast.

The middle section has mostly collapsed but the stern is intact and the prop sits in the sand. A very photogenic davit encrusted with corals extends out from the stern section, and as I was framing a photo with the davit and the sun behind it, a group of four large spotted dolphins swam by our group of divers.

Because of the large quantity of gold

and copper on the boat, Lloyds of London sent one of their best salvagers to the wreck. All the gold was reported found as well as much of the copper and mail, although there's still a rumor that gold coins may be found around the ship. I had a quick look, but sadly, didn't find any.

Rosalie Moller. Another loss of WWI, the *Rosalie Moller* was built in 1910 in Glasgow by Barclay Curle & Co under the name *Francis*. The 108m (355ft) ship was sold in 1931, renamed, and started sailing in China. When the war broke out, she was moved back to Liverpool and placed under the command of Captain James Byrne, transporting goods for the Royal Navy.

In July 1941, she was carrying Belgian

coal, highly coveted during the war because it was supposed to burn longer and created less smoke, to Alexandria.

With the Mediterranean off limits because of German and Italian forces, she sailed the long way around via South Africa. Having gotten near the Suez Canal, just like the *Thistlegorm*, the *Rosalie Moller* took anchor to wait its turn to go up the channel. This ship's passage was also affected by the collision that made the *Thistlegorm* wait.

Anchoring in Safe Anchorage H, the *Rosalie Moller* had no idea about the loss of the *Thistlegorm* two days earlier, when during the night of October 8, two more twin engine Heinkels flew overhead and released two bombs, one hitting the *Rosalie Moller*, and she sank in less than an hour. Only two lives were lost, the rest of the crew were able to get to the lifeboats.

Sitting between 17 and 50m (55-165ft), this is one of the deeper wrecks we dived. With technical diving training and equipment, this ship is known for its penetrations particularly to the engine room, but we only



explored the exterior, which is still very much intact and sitting upright. Visibility was a little murky, which is often normal, making the ship a little eerie and mysterious. We had no current, and that combined with the bottom composition probably led to the decreased visibility.

Descending from our boat, our first view was of one of two still upright masts wrapped with soft coral. Headed further down to the ship deck, we swam towards the bow. I looked into some of the deckhouse windows, and the interior was packed full of cardinalfish, glassfish and other juveniles. Near



the bow, the deck gear was all still in place, and a crocodile fish was lounging in front of the winch.

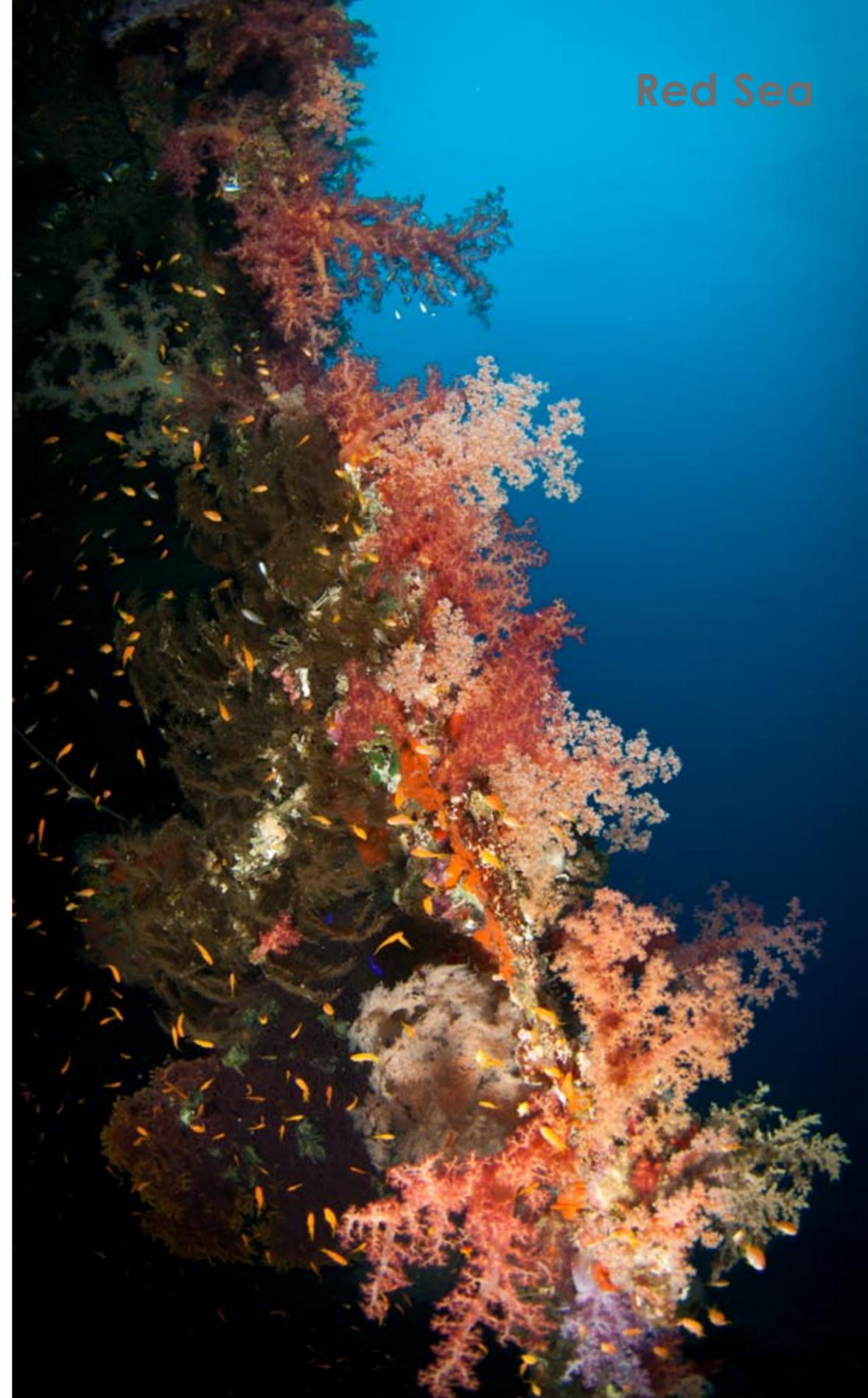
This site is a popular place for a tiny, but very pretty purple flabellina nudibranch. We found three of them during our short dive on the *Rosalie Moller*. Running short on bottom time, I headed back to the forward mast to ascend and saw several large tunas hunting around the wreck.

Dunraven. Sometimes the story of the finding of a wreck can be just as exciting as the account of its sinking. In the case of the *Dunraven*, in the 1970s, Howard Rosenstein was looking for a shipwreck to dive. Local fishermen provided him with the "GPS coordinates" of a site described cryptically: "There is a place out in the Gulf

in the direction of the setting sun, far from land and at least three cigarettes from Ras Mohammed. Here, there is a reef which comes out from the sea to break the surface at low tide. Go to the end of this reef coming from the south east."

Pulling out some charts, Howard Rosenstein got quite lucky guessing the exact spot. The ship wasn't identified as the *Dunraven* for another two years, when engraved porcelain had been found with the name.

Launched in 1873, the *Dunraven* was capable of being powered by sail or steam. In 1876, the ship was on its way to Newcastle from Bombay carrying spices, timber and cotton. In good weather, the ship sailed straight into the reef near Ras Mohammed in the dark. The crew tried for 14 hours to get the ship off the rocks, finally



THIS PAGE: Scenes from the wreck of the *Dunraven*





THIS PAGE:
Scenes from
the wreck of
the *Kingston*

Red Sea

most of the wreck from the reef. Many fish have made the wreck their home including many anthias and several schools of glassfish. Some of the more notable remains include four tall posts near the bow area standing straight up. At the deepest point, 19m (62ft), the propeller sits encrusted with coral and fan corals are growing on the hull.

The *Kingston* was a 78m (255ft) by 10m 32ft rigged iron hull screw steam ship sailing from London through the Mediterranean and the Suez Canal to Aden, Yemen, with a crew of 25. Once getting through the treacherous canal, Master Thomas Rich-

ard Cousins went to bed to sleep. Near midnight, the ship hit Shag Rock. In an attempt to save the vessel, the crew dumped a large quantity of the coal cargo. The ship was still afloat when the captain asked the passing steamship *F.W. Ward* to help pull her off. They declined but offered passage for the crew, which the captain denied.

Later the *Columbian* came alongside and tried to help pull her off, but couldn't. A full day had passed when the ship started taking on water and the captain decided to have the crew abandon ship. Seventeen crew were given passage on the

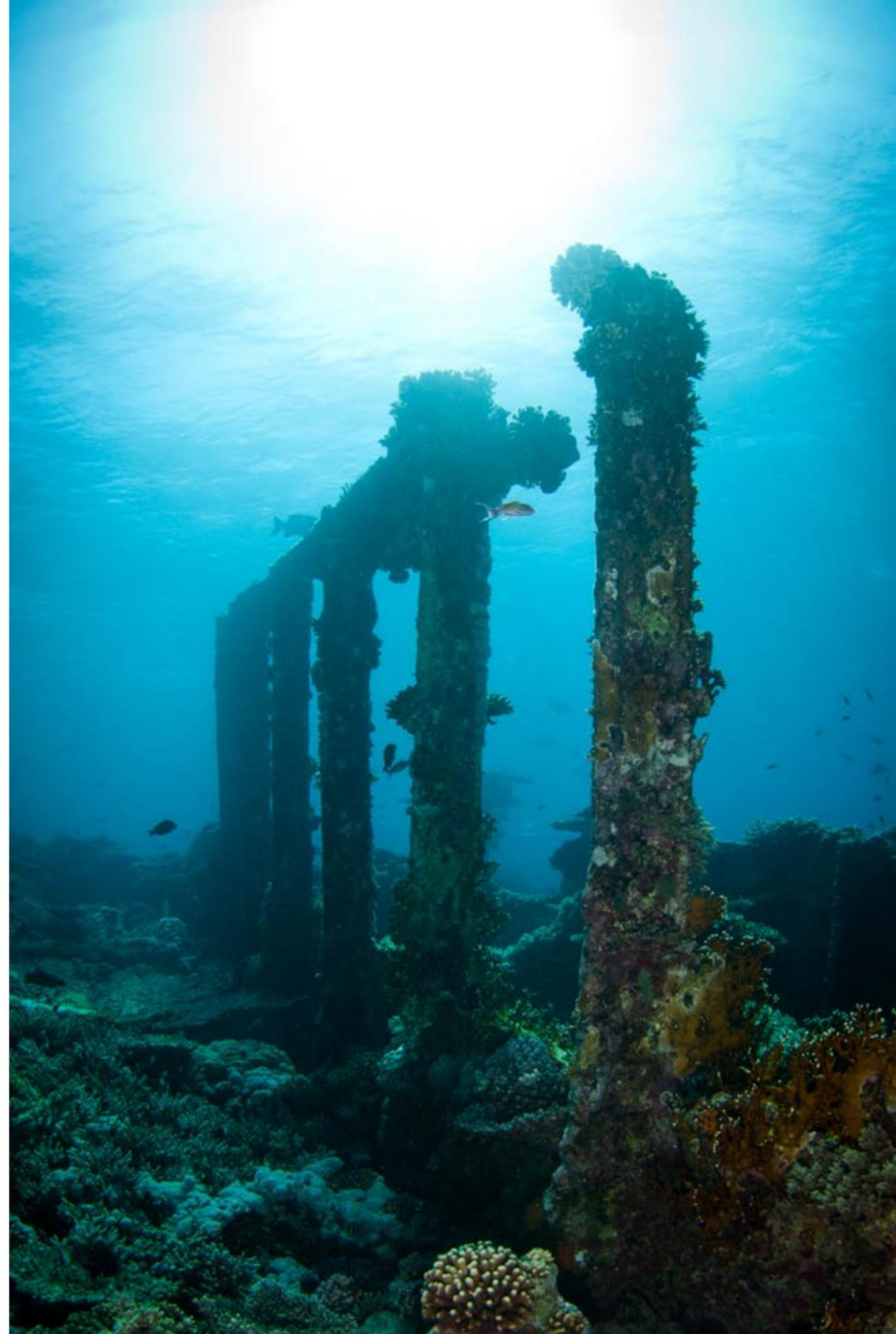
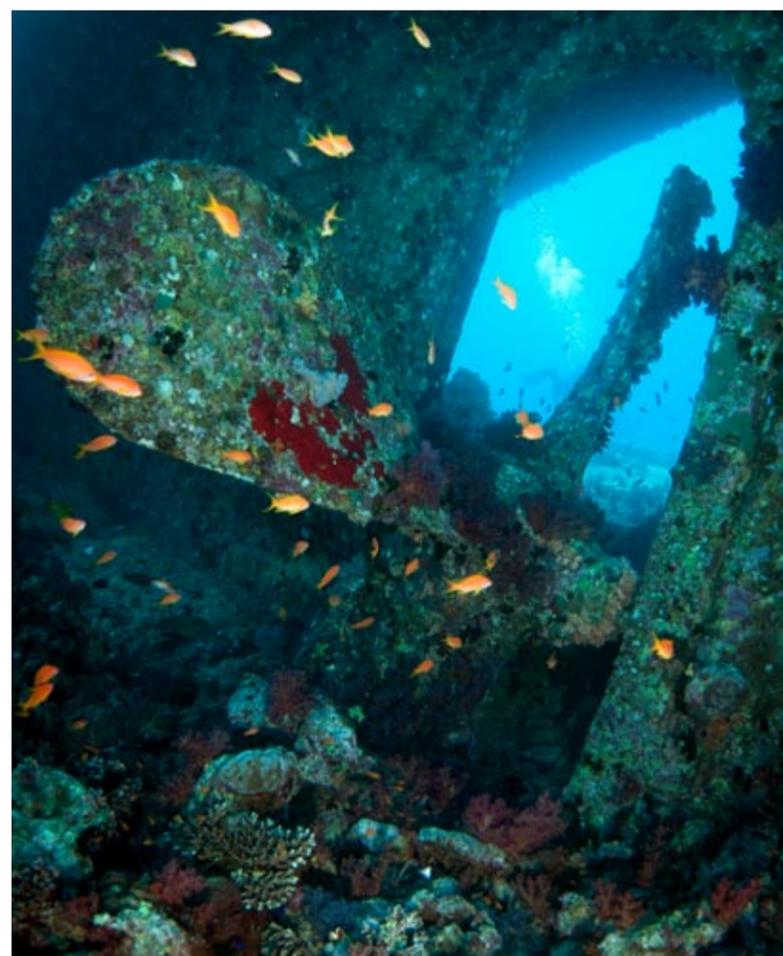
succeeding, but it still capsized, sinking quickly. The 25 crew were rescued by local fisherman.

Mostly upside down and lying on her port side, the propellers are the shallowest point at 17m (55ft), and the ship deck sits in the sand at 27m (88ft).

With several entrance points into the interior, the *Dunraven* made for a fun dive swimming inside most of the upside down hull. We started the dive outside the wreck near the propeller (one of the shallowest points) which still has three of the blades intact. Coming around the starboard side, we entered the ship near the sand, which

almost felt like entering a large dome. Light made its way in through the lower sides near the sand, with the ship overhead. Squirrelfish and goatfish schooled inside the wreck, and after exiting, a large napoleon wrasse paid us a visit. The area around the wreck was very nice reef with hard corals, sea fans, and lots of reef fish.

SS Kingston. All that remains of the *Kingston*, which sank in 1881 after running aground on Shag Rock, are the metal beams and hull. Sitting upright with its shallowest point at 4m (13ft) the ship remains are so overgrown with corals it's hard to differentiate





Remains of the *Jolanda*; Diver and fan coral in the Red Sea (right)

Red Sea

abyss. Coming up on the *Jolanda* cargo, I first saw one lone white porcelain toilet sitting upright, as if it were waiting to be used. Continuing on they littered the sea floor sometimes stacked on top of each other and scattered in all directions. A small bit of metal ship structure was left as well, with the beams decorated by soft coral, and fish taking up residence underneath, in the shadows.

The ship was relocated in 2005

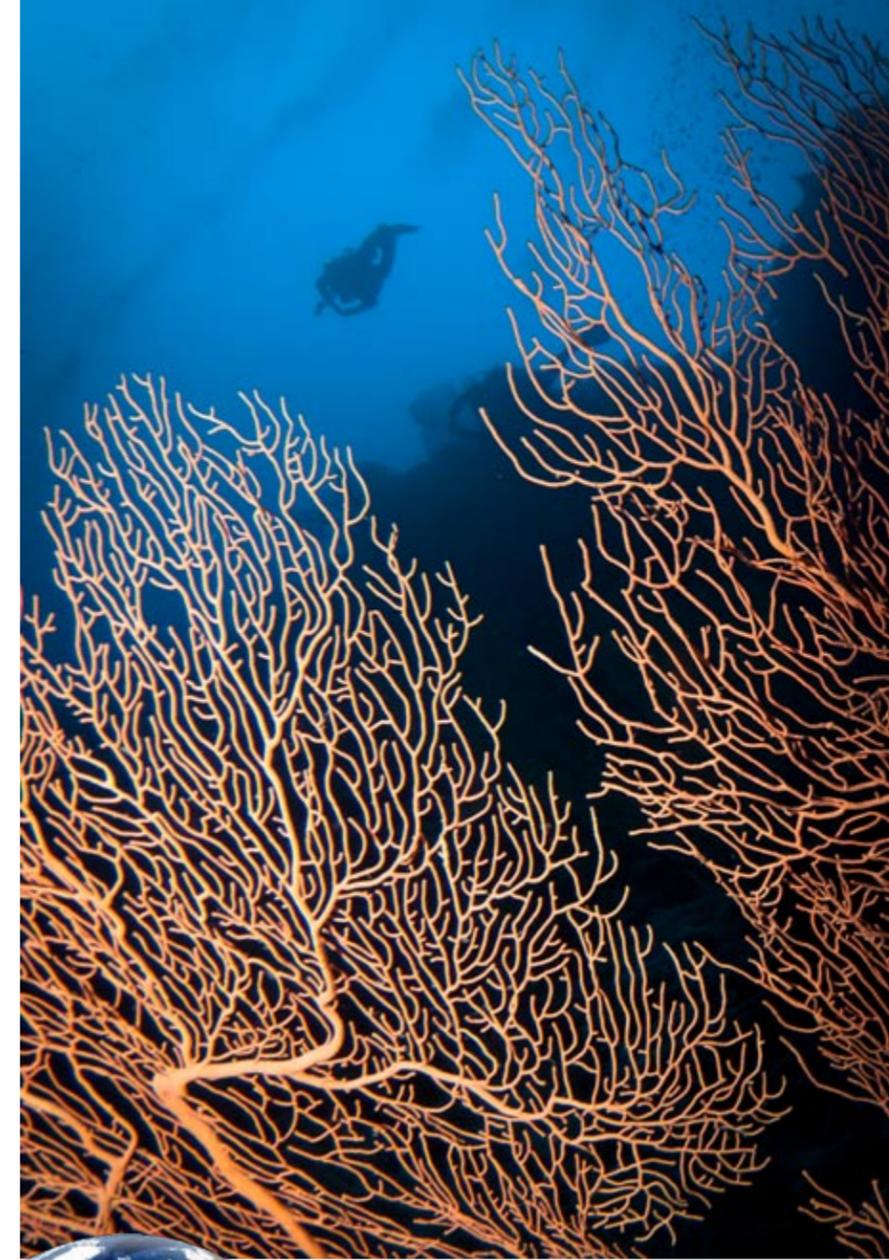
between 145 and 200 meters deep, but for me, the cargo was just as interesting, even without the ship.

Afterthoughts

The history that lies beneath the Red Sea makes it a playground for any wreck diving enthusiast. With so many ships having sunk for different reasons over many years, it has become an underwater museum decorated with the gorgeous and colorful corals and fish of the Red Sea. Tales of destruction and loss, wars, bad weather and just bad luck are as numerous as the abundant marine life of the Red Sea. As my week came to an end, I was already planning my return trip to see it all again and maybe check out the Southern Red Sea wrecks. ■

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passing *Almora*, but the rest of the crew stayed onboard for another day and then moved to Gobul Island, staying four days before being rescued.

Jolanda. Often incorrectly spelled Yolanda, the *Jolanda* was a 75m (245ft) Cypriot freighter sailing from Piraeus to Aqaba with a cargo of toilets, wash basins and bathtubs. She ran aground near Ras Mohamed during a bad storm on 1 April 1981. After four days, the ship rolled onto the port side sitting at the edge of a wall. Until 1985, she was completely in recreational dive depths, but then the ship fell over the edge leaving only the toilet and bathtub cargo behind on the reef between 10 and 30m (32-100ft).

Close to the popular dive site Shark Reef, the *Jolanda* cargo is an unexpected sight underwater. We started our dive at Shark Reef drifting along in a slight current. The hard corals cover the sloping wall, which extends off into the



Cargo of ceramic toilets litter the wreck site of the *Jolanda*



Location of Hurghada on map of Egypt and global map





Aging under pressure: Divers maneuver a crate filled with bottles of wine into position on the sea floor of the Mediterranean off Costa Brava, Spain

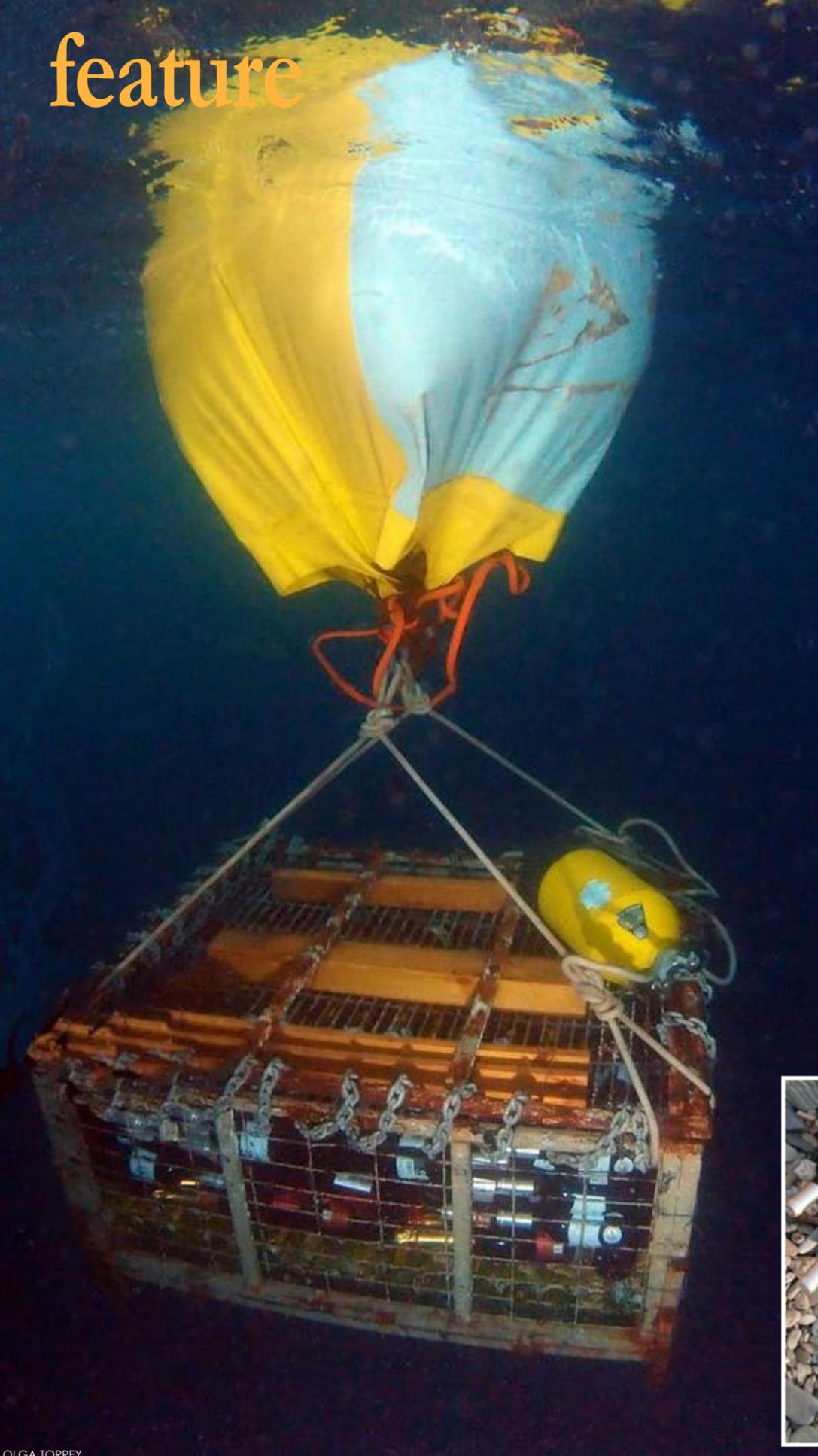
Text by Larry Cohen
Photos by Larry Cohen and Olga Torrey

So what makes a perfect glass of wine? Wine experts use words such as toasty, tight, tannic, buttery, jammy, opulent, earthy and deep to describe wine. Many wine producers in Europe and California are bringing new meaning to the word deep. Some wine experts believe that aging wine underwater has many advantages. Conditions that impact aging include temperature, pressure, humidity, pressure motion, darkness and oxygen. Ideal conditions can be found underwater.

Taking Winemaking **Underwater Vintage** *To Greater Depths*

LARRY COHEN





Deep Wine



LARRY COHEN



LARRY COHEN

CLOCKWISE FROM LEFT: Lift bag filled with air so crate can be pulled to drop location; Espelt winery's lab; Espelt winery has over 600 acres of vineyards in Costa Brava, Spain; Wine being aged in barrels; Wine bottles on the beach getting ready to be put into crates; Inflatable boats and divers are needed to position the wine



LARRY COHEN

There are other reasons for storing wine underwater. A winery in Italy began aging wine underwater because they did not have adequate cellar space. When wine submerged underwater is compared to the same wine stored in a cellar, there is definitely a difference. The underwater wine seems older and intense. It is also more complex, with softer tannins according to many experts.

Espelt is a family-run winery in Spain near Hotel Cala Joncols, home to the Euro-Divers operation in Costa Brava. A number of years ago, the Espelt family, Cala Joncols and Euro-Divers decided to try underwater wine storage. The Euro-Diver staff sank a number of crates. They discovered if they sank the wine too deep, pressure would push in the corks, ruining the wine. After some experimentation they found 33ft (10m) to be the perfect depth. The wine was retrieved eight months later and tested. Both expert wine tasters and lab testing showed the very young wine matured faster under the Mediterranean Sea.



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Deep Wine



OLGA TORREY

Cala Joncols and Euro-Divers continue to sink wine every year. Huge locked crates are filled with bottles of Vailet (white), ViDivi (red) and Escuturit Brut Cava (sparkling) wine. Lift bags are attached to the crates so they will float, while boats drag them into position. Once over the spot, divers carefully removed the air from the lift bags lowering the wine to the bottom of the Mediterranean Sea. Then a small amount of air is added to the bags, and the crates are moved into the exact spot.

If there is a small group of divers at the hotel when it is time to retrieve the wine, Euro-Divers runs a scavenger hunt. The locks are removed, and any diver that finds the crates can take one bottle of wine. Cala Joncols, does sell the wine at a premium price. Is the wine better? Not being a wine expert I would say it is at least different. But as a diver sharing a weathered bottle of wine with marine growth attached to it, is definitely worth the price! ■



LARRY COHEN

THIS PAGE: Divers attach lines to the crates so they can be dragged by boat into 33ft (10m) of water; Eight months later the weathered wine bottle is sold at a b b. premium price (left)

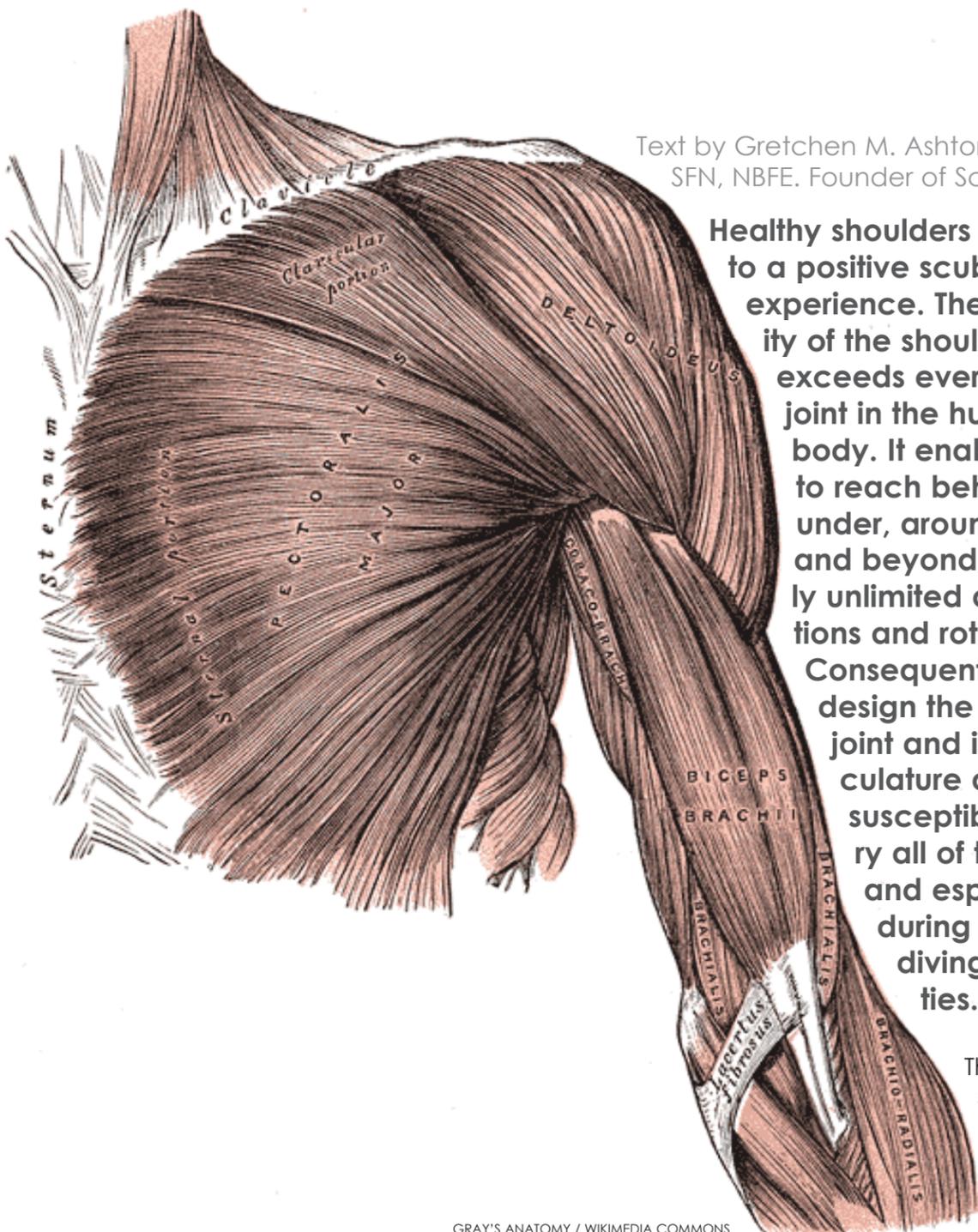


OLGA TORREY

Divers release air from lift bag to gently lower wine to the sea bottom



ED.— ALWAYS CONSULT A PHYSICIAN FIRST BEFORE BEGINNING ANY EXERCISE OR FITNESS PROGRAM.



GRAY'S ANATOMY / WIKIMEDIA COMMONS

Text by Gretchen M. Ashton, CFT, SFT, SFN, NBFE. Founder of ScubaFit®

Healthy shoulders are vital to a positive scuba diving experience. The mobility of the shoulder joint exceeds every other joint in the human body. It enables divers to reach behind, under, around, above and beyond in nearly unlimited directions and rotation. Consequently, by design the shoulder joint and its musculature are highly susceptible to injury all of the time and especially during scuba diving activities.

The ball and socket joint of the shoulder, unlike the hip joint,

is more like a cup and saucer as the ball of the upper arm bone (humerus) is larger than the socket (glenoid) of the shoulder. Stability of the shoulder is dependent on the rotator cuff, which is comprised of tendons and small muscles that keep the cup in the saucer during movement.

To keep things moving smoothly, the joint is padded with two sacks (bursae) of lubricating fluid (synovial fluid) that reduce rubbing between the muscles and tendons and help protect the rotator cuff from other bones (like those of the acromion joint).

Developing and maintaining healthy shoulders can be tricky. Preventing injury is best accomplished with an individualized exercise program, but certain training activities required to protect the shoulder also present some risk of injury especially, if performed incorrectly.

Divers may best begin by knowing the current condition of their shoulders and working forward at an appropriate level of rehabilitation, stretching and strengthening. Divers should avoid exercises that are clearly not suitable for their current shoulder status. If an

injury exists, depending on the type of an injury, some therapeutic exercises may also be precluded.

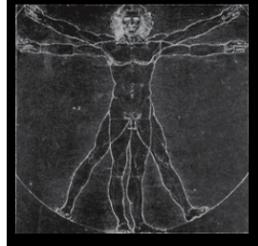
Options may include strengthening assisting muscles, (i.e. biceps and triceps) to help carry the load for the shoulders, but if nearby muscle groups improve too far beyond that of the shoulder, (i.e. the chest) the shoulder may become more susceptible to injury. Other solutions include, always working with lighter resistance than other muscle groups, creating methods for stabilizing the shoulders, and allowing more time in training regimes

Scuba Shoulders



FILE PHOTO: PETER SYMES





for shoulder muscles and connective tissue to adapt.

Allow the shoulder to improve in response to training, but never force it.

It is also important for divers to consider posture and shoulder function. Good posture goes beyond sitting up straight. The shoulder blades (scapula) are best pulled down and toward the center of the back to aid in good posture and especially during exercise.

Common injuries

Dislocation of the shoulder can occur when extreme outward pulling and/or rotation pops the cup out of the saucer (head of the humerus out of the glenoid socket).

Separation between the collarbone and the shoulder blade usually occurs as a result of bracing with an outstretched hand during a fall or a hard impact to the shoulder. Ligaments of the shoulder may be torn partially or completely.

A **rotator cuff tear** may be caused by impact or a fall on an outstretched arm and/or the result of wear and tear, lifting strain, repetitive use and aging.

Broken bones can occur in the shoulder as a result of injury.

Impingement is a compressing of the rotator cuff usually caused by a combination of factors from mild injury, wear and tear, and aging, to tendonitis where the tendons of the rotator cuff and sometimes biceps become inflamed, and bursitis when the bursa sacs become inflamed and swollen.

Frozen shoulder is when, usually because of pain, a diver doesn't move the shoulder for extended periods of time allowing adhesions (type of scar tissue) to



Shoulder press with dumbbells, in seated position (left), and with alternating arms (below)



build up preventing both movement and lubrication of the joint.

Arthritis of the shoulder can occur as in many other joints of the body.

Shoulder pain may be constant, intermittent, localized or referred to other areas of the body. Injured divers may experience aching, swelling and immobility. Sleeping, daily activities, exercise and, of course, diving can be interrupted for extended periods of time because of shoulder conditions.

Physicians often prescribe medications to treat inflammation and pain, but these treatments should be considered short-term options as they introduce additional potential complications and side effects. Whenever possible, divers are encouraged to pro-actively seek treatment, physical therapy and, as a last option if necessary, surgery, to resolve shoulder injuries as quickly as possible so they can return to normal living. Extended periods of shoulder disuse or compromised shoulder function can have long-lasting impacts to the overall health of the diver.

Exercises for healthy shoulders

Divers will get the best results by avoiding overuse of the shoulders, training muscles in a balanced fashion for strength and flexibility, and performing all exercises with safe and proper form.



Shoulder Press with Dumbbells

The seated shoulder press is a primary exercise for the shoulders. It directly targets the deltoid muscle, which has three sections (anterior, medial and posterior). These muscle sections can be seen in the vertical lines or definition of well developed shoulders. In contrast, when there

is little muscle development of the shoulder the outlines of the bones of the shoulder joint can be seen. Notice that in the start position, the elbows are at shoulder height with the bottom of the upper arms parallel with the ground. Never drop below this point when performing overhead shoulder exercises. This goes for machines as well. Many fitness center machines do not allow enough adjustment for a safe starting point for shoulder exercises. Inhale at the start of the exercise and when lowering the weights. Exhale during the press while lifting the weights. Contract the abdominals for



torso stabilization. This exercise may be performed with both arms at the same time or by alternating the press left and right. The idle arm gets great static contraction while waiting to press again.

Front Shoulder Raise – Standing

The front shoulder raise does exactly as described and along with working the entire deltoid targets the front (anterior) deltoid. Even more emphasis can be placed toward the front of the shoulder by rotating the arm to a “thumbs up” position. Inhale at the starting position and exhale while raising the weights. Inhale while lowering the weights and repeat.

Front shoulder raise in the standing position—starting position (far left) and ending position (left)

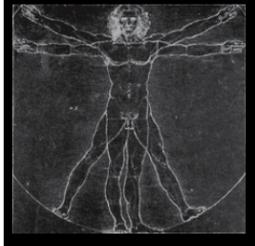
Diver releases surface marker buoy during a dive in the Adriatic Sea



Shoulders

FILE PHOTO: PETER SYMES





Shoulder 90's or Cheerleaders

In lieu of a true side lateral raise with both arms at the same time, combining a front raise with a side lateral raise greatly reduces the stresses on the shoulder joint that occur with the traditional side lateral raise. It is important to work both sides equally. Divers have the option of performing all repetitions on the same side or alternating from side-to-side. Inhale to begin and while lowering the weights. Exhale while raising the weights.

Shoulder Rear Deltoid Fly

The rear deltoid shoulder fly requires good concentration and control to ensure it is performed correctly and safely. The photographs demonstrate three positions for performing the rear deltoid fly, which targets the posterior section of the deltoid and recruits other small mus-



cles of the back and shoulder. To begin, position the arms in front of the body as if hugging a tree. Raise the arms until the elbows are in line with the shoulders. Do not force the elbows beyond the range of motion of the shoulder. The torso will begin to lift and neck strain can occur when trying to perform this exercise too high. It may help to imagine a lobster claw opening and closing or that there is a hinge on the center of the back. Inhale to start and while lowering the weights. Exhale while raising the weights.

Tips and Precautions

When performing overhead shoulder exercises, beginners should always sit in a chair or bench with support for the back.



Divers with certain back conditions, in particular bulging discs, should avoid pressing weights overhead or any exercises that compress the spine.

When performing side and front shoulder raise exercises, it is usually best to stand. There is some additional isolation that can occur from being seated, but it comes with added risk of injury.



Shoulder Rear Deltoid Fly in seated position—starting position (left) and raised position (above); in standing position—starting position (right) and raised position (far right); and in lying down position (upper right)

Shoulder 90s or Cheerleaders starting position (far left) and raised position with alternating arms and with both arms (left)

While divers can develop great strength in the shoulders that allow for handling significant resistance, when training the shoulders for diving it is prudent to use moderate weight and work at higher repetitions.

The exercises shown here are sequenced with purpose and best results are accomplished if they are performed in this order.



Shoulders

Contract the abdominals, keep the knees soft, not locked, and both feet placed flat on the ground when performing shoulder exercises.

Gretchen M. Ashton is registered with the National Board of Fitness Examiners. An advanced diver, International Sports Sciences Association Elite Trainer, and world champion athlete, Ashton developed

the ScubaFit® program and the comprehensive FitDiver® program, which includes the first mobile app for scuba diver fitness. Ashton is the co-author of the PADI ScubaFit Diver Distinctive Specialty course. For more information, visit: Scubafit.com

