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DIVER

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Strange creatures, rocky reefs, shipwrecks and sea caves...

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LEARNING FROM FREEDIVING THE GOLDEN RATIO EXPLAINED

Volume 42 Number 3

DIVER

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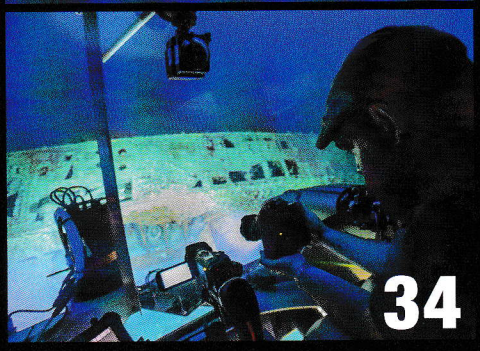

Photos: Pascal Lecocq, Photos: Courtesy of Robert Carmichael, Project Baseline

Cover: Brandon Cole

DIVER Brief: starts p8

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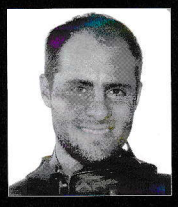
Contributors this issue:



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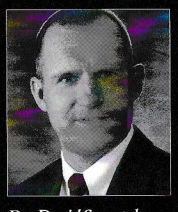

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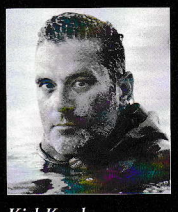

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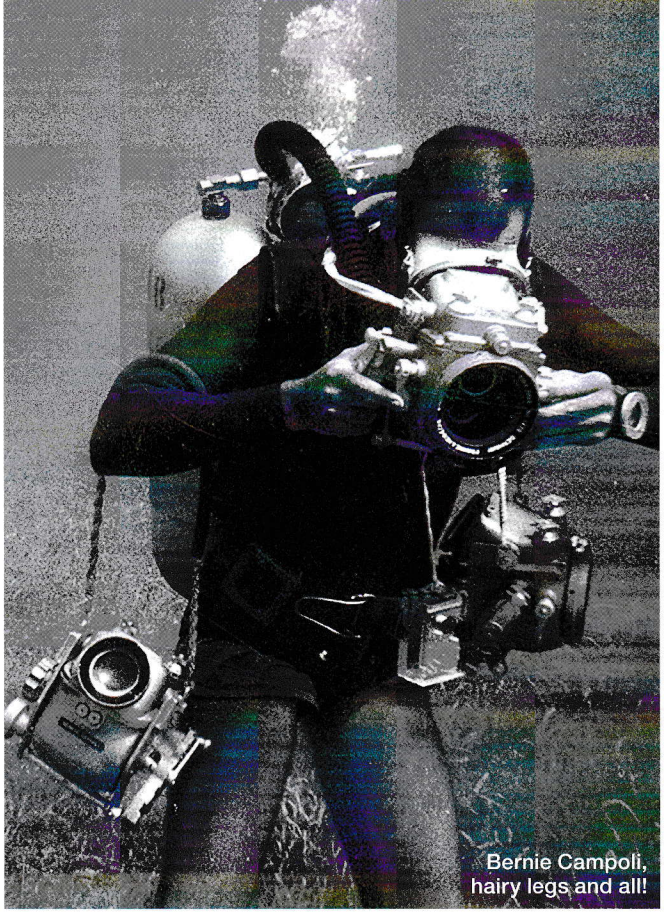


Bernie Campoli, hairy legs and all!

Phil Nuytten

Publisher and Senior Editor

For the first time in many years I had to give the 'Beneath the Sea' (BTS) show a pass. Rats! Rats! Rats! I had a schedule conflict with some potential submersible buyers coming to kick the tires (in a manner of speaking) on our DeepWorker subs. I really think BTS is one of the very best of the dive show crop and I particularly hate to miss this one, because several of my long time diving friends are getting awards this year. All are shooters of no small fame: Emory Kristof, whose underwater images appear in countless issues of *National Geographic*, is the 2017 BTS 'Legend of the Sea' recipient. Howard and Michele Hall – the dynamic husband and wife duo who have been making award-winning films for 50 years – from 35mm movie film to today's cutting edge digital, the Halls do it all – are getting the BTS 'Pioneers Award'. And my ol' buddy Bernie Campoli will receive the BTS 'Diver of the Year' award this year for his service as an underwater image maker to the USN underwater demolition teams, the 'Frogmen' of more than a half century ago, and for the images that appeared in *LIFE*, *Skin Diver Magazine* and many, many other publications.

For the precious handful who actually read 'Soundings', you may remember that Volume 43, Issue 1 of this fine magazine featured a photo of yours truly with the three Rolleimarin 70mm cameras as my solution to the 'nasty' little 36 exposure 35mm Nikonos camera. DIVER had no sooner landed on Bernie Campoli's doorstep than he emailed me this picture of him with three Rolleis during UDT advanced training in St. Thomas, US Virgin Islands – predating my idea by half a decade! Yup. That's Bernie in 1964, hairy legs and all!

Speaking of old buddies, the feature interview this issue with one of my favourite underwater artists, Pascal Lecocq, is excellent (see page 28). If you haven't yet seen his work, start by going to Pascal's website (www.pascal-lecocq.com). Check it out – you'll be surprised! Then go to his 'events' page and find an exhibition near you so you can see his work in person. (Rats! Pascal had his 18th solo exhibition at 'Beneath the Sea' this year! You can see why I hate to miss BTS!) Our columnists Michel Gilbert and Danielle Alary deserve kudos for this piece, and their regular column this issue (page 52) expands on some of the technical concepts referenced by Pascal – the perfect complement to a very interesting interview!

> *"I have always loved The Big Blue, but my final pick would be The Abyss. Probably because Nutyco did a lot of the props..."*

Elsewhere in this issue, Jill Heinerth takes us on a brief 'Turner Classics'-style tour of underwater movies, and probably nailed a couple of your personal favourites. I have always loved *The Big Blue*, but my final pick would be *The Abyss* – probably because we (Nuytco) did a lot of the props, provided real submersibles and a full dive team, and made some significant bucks while doing so! (We also formed a relationship with Director Jim Cameron that continues to this day.)

This issue also contains a real cross-section of things diving: from Joe Hoyt's feature on the use of stereophotogrammetry in underwater archaeology, we jump to Tasmania, Bonaire, Québec and North Carolina. Amongst our regular columnists, Doc Sawatzky gives his take on gout and diving, Kirk Krack explains how breath-hold training can benefit all divers (scuba divers, this means you!), Jean-Michel Cousteau chimes in and TV's Scott Wilson discusses the show *Descending* in our interview section. At DIVER mag, with all of our contributors, columnists and hard-working staff, we have always done our best to avoid the same ol', same ol' – and show you something new and interesting each issue.

Spring has sprung! Time to check your gear and decide where to go and get wet. [ ]

Regards

Phil

Photo: Scott Slaughter

Pascal Lecocq

DIVER INTERVIEW

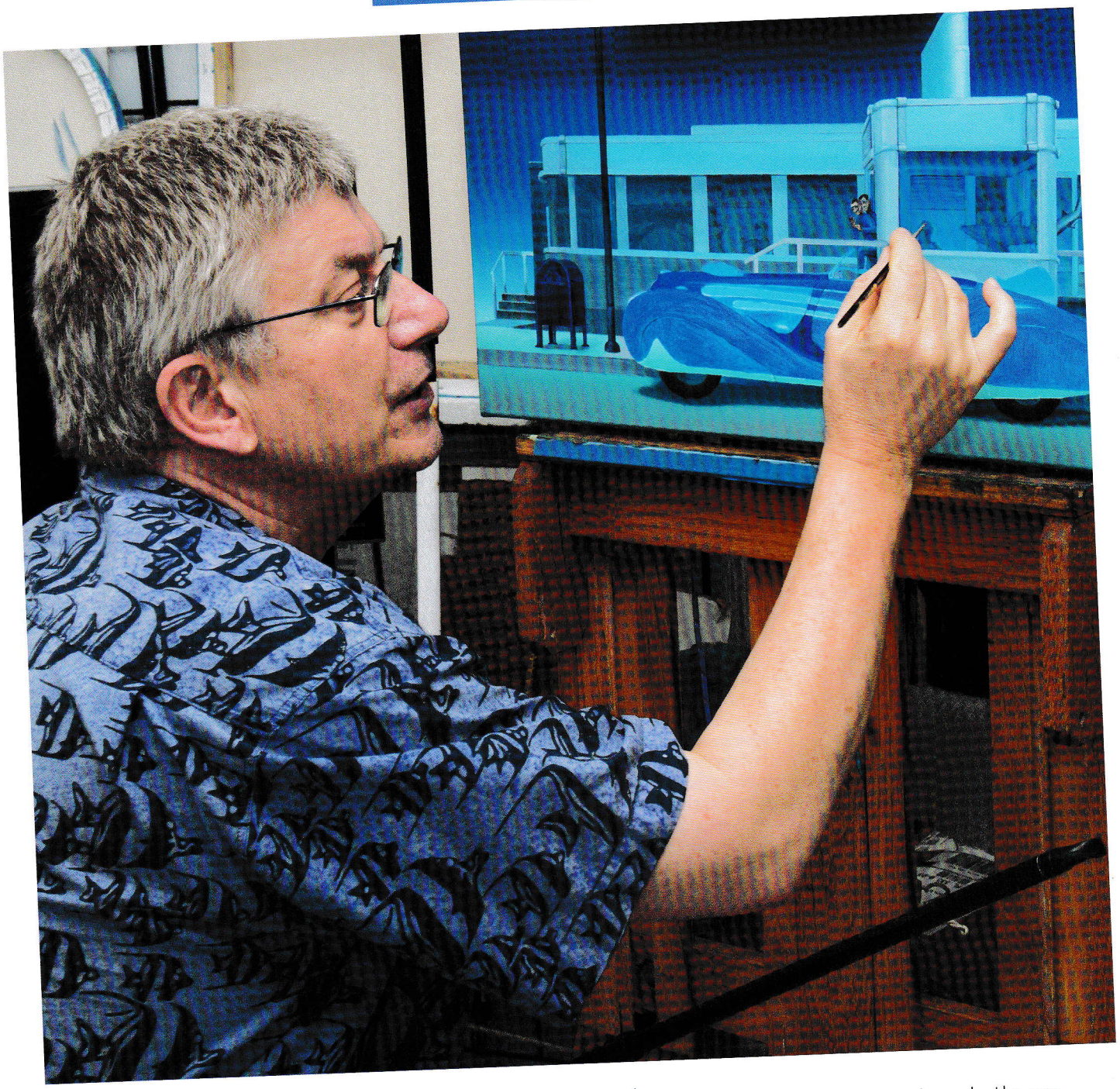


Photo: Alary-Gilbert/SUB-IMAGES

Artist Pascal Lecocq produces unique underwater-themed paintings using a technique that goes back to the Roman Empire. He is a "modern classic" in the truest sense of the world. Michel Gilbert and Danielle Alary interviewed him at his studio in Fort Lauderdale, Florida...

DIVER: How did you become a painter?
Pascal Lecocq: Because I was born on June 4th 1958! I was born and so I was a painter.

DIVER: Yes but...
PL: I started very early. I took violin lessons at age 3. My parents were from modest origins and for them, culture was a way to move up socially.

Violin is difficult to play; it requires a very precise technique. At age 12, I was tired with the lessons and I decided to quit. My parents then sent me to the art school in Fontainebleau. I had been drawing since I was 3 and my folks kept my 'works'. I still have them.

DIVER: How do we go from the kid arts school to painting?
PL: The arts school where I went was a very traditional one. I learned in the very traditional 19th Century teaching approach: strong technique, measurement of everything, composition and positioning, using rules like the golden ratio. Later, at University, since I was majoring in Art, I continued to learn the techniques of the old Masters.

Art books fascinated me. At this time, they were mostly in black and white. It was kind of crazy to learn about painting, which uses colours, relying on black-and-white pictures. This is quite a departure from what we have today.

DIVER: Does this make a difference in your work?
PL: We visited museums and saw colour paintings, but still, this black and white learning greatly influenced me. My technique is what it is due to the way I learned.

DIVER: You are the Painter of blue, so colour is a key part of your work?
PL: Sure. Interestingly, our perception of colour today is much different than what it was 50 years ago; and even more so from what it was a thousand years ago. Vision and colour perception are very cultural. For example Japanese do not perceive white the same way we do, it does not mean the same thing to them.

That being said, I am lucky because I paint mostly in blue hues and blue is the most popular colour in the occidental world today.

Painting: Courtesy Pascal Lecocq

DIVER: So perception plays a key role in our appreciation of art, especially paintings?
PL: Of course, there is something physical about the reflection of the light on colour pigments. We have a very wrong perception of colour today due to our computer screens. It looks flat. You must see a real painting in a museum to really appreciate all the depth of colours and perceive it in the right way.

DIVER: More on your own story?
PL: Around age 12, I saw a painting from Salvador Dali in a book. The name of the painting is Slave Market with the Invisible portrait of Voltaire.

Pascal's most iconic work, La Corrida. "To this day, it is still my most popular painting. It has become my signature. I feel like I made only one painting in my life."

At first sight, interestingly, I did not see Voltaire's portrait. I only saw it when I quickly flipped the pages. That was a shock for me! That image is made up of other subjects.

I looked at Dali's other paintings and the idea of the double or triple image was everywhere. This was for me: a concept combining many things to make a painting, it is not just a picture.

DIVER: This defined your style?
PL: I am a very conceptual, science-oriented person so, putting together an idea in my mind and then executing it on canvas is what I do, as opposed to going outside and painting scenery.

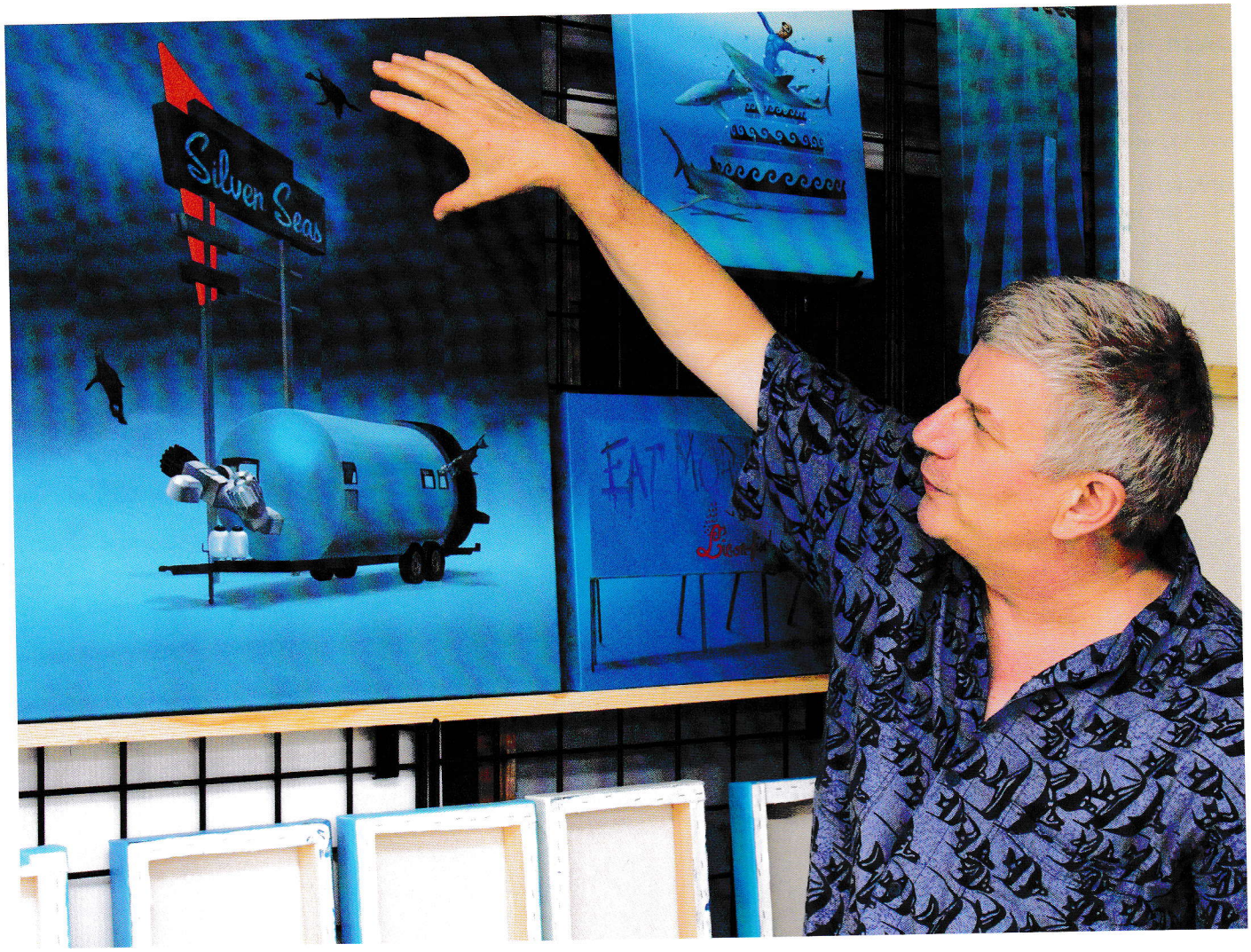


Photo: Alary-Gilbert/SUB-IMAGES

DIVER: You have a Ph.D. in Art. Where does it come into play?
PL: My parents wanted me to have a "real career" and asked me to go to university, maybe in architecture. We finally settled on teaching. So I did the academics all the way to Ph.D. level to become a teacher. But you know what? I did not learn anything about painting at university because I already knew what I needed to know. I had taught myself many things in painting. I went to university to get a paper.

At the Ph.D. level, I decided to do research on opera. My research was oriented in set design and, more specifically, on the relationship between the different arts in opera – music, literature, architecture, costume design, lighting. My set design thesis was literally saying that set design does not exist; the show exists as a whole. I studied different productions and eventually I was asked to do set design. So, for ten years I did 29 productions. That meant I was painting less.

"We all see differently... the blue you see in my painting is not the same blue I put there"

DIVER: You are not a scuba diver, what is your connection with water?
PL: I was born in Fontainebleau near Paris, where you find a large forest. Maybe I wanted to escape the sea of green of my first twenty years. I was also very attracted to space, the sky, the clouds and, you know, clouds are made of water. I also think I may have been a shark in a previous life!

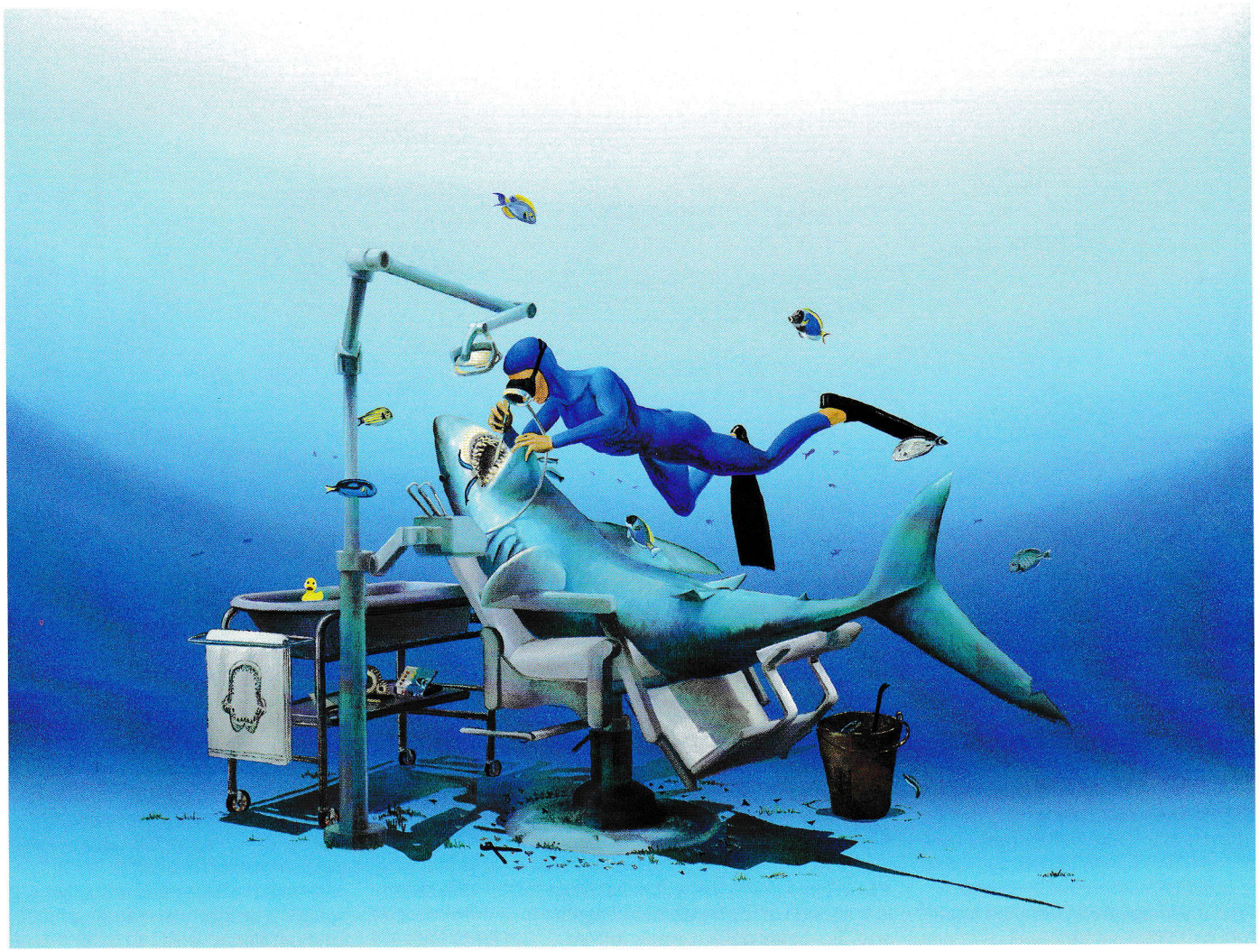
However, I have trouble with water. I lost an eardrum to otitis at as a very young kid and never got it fixed. Now I simply put a plug in my ear when I go swimming or snorkelling but I cannot scuba dive.

I was not really connected to the undersea world. I did not learn about Jacques-Yves Cousteau until I made the first public exhibition of my underwater work in Paris in 1992.

At home is in his studio, a classic painter continuing the style perfected by the master in the 1300's

DIVER: How did you come to underwater subjects paintings?
PL: In 1986, I was working on a production of the Flying Dutchman from Wagner. To simulate the wave action I asked two stage hands to move a large curtain. One day, I was seated in the room at the orchestra level. Singers were on stage and the orchestra in the pit with this curtain above them and this gave me an idea to make a painting of divers playing music under the sea. I made a little sketch with two divers, one with a big instrument called the 'tuba' in French and the other with a violin.

I played with the word 'tuba', which has two meanings in French: a musical instrument and the translation of the word 'snorkel'. My characters were underwater and asking themselves: "Where is the flying Dutchman?"



Painting: Courtesy Pascal Lecocq

DIVER: From that first painting, how did it evolve?
PL: Lots of dots here and there eventually connected and brought me into this world of diving.

I put my 'Flying Dutchman' painting in a studio/gallery I had opened in Honfleur, on the west coast of France. In 1992, I had two or three paintings with my signature divers, all black with round masks.

A dive travel agency owner walked in my gallery and invited me to exhibit in his booth at the Paris boat show. I went and experienced a very good response. I discovered the scuba diving world and saw a huge crowd around a guy... who was Jacque-Yves Cousteau!

At the Paris show someone from the Antibes World Festival of Underwater Images invited me to exhibit.

DIVER: So you participated?
PL: I went to Antibes, rented a booth, sold reproductions, postcards, etc. I had a tremendous response because I was different. I connected with many people from the industry and someone told me to exhibit at DEMA. In Antibes, I also saw movies and photographs that provided with more inspiration.

That also led to invitations to exhibit in many countries, as far as Japan and Russia for example. Antibes was a turning point.

DIVER: You always paint divers as anonymous people, wearing black or blue wetsuits and old-fashioned masks, why?
PL: This black wetsuit diver image originates from the old James Bond movies where fighting villains would always wear an all black outfit. Also, you could not see their eyes.

I do not like to date my paintings by having things like modern masks and fins. By adopting this old signature diver look it becomes more classical. I do the same if I put a car in a painting; it is a vintage from the 50's. The wetsuit-dressed diver is also a way for me to paint detailed anatomic characters without doing a nude.

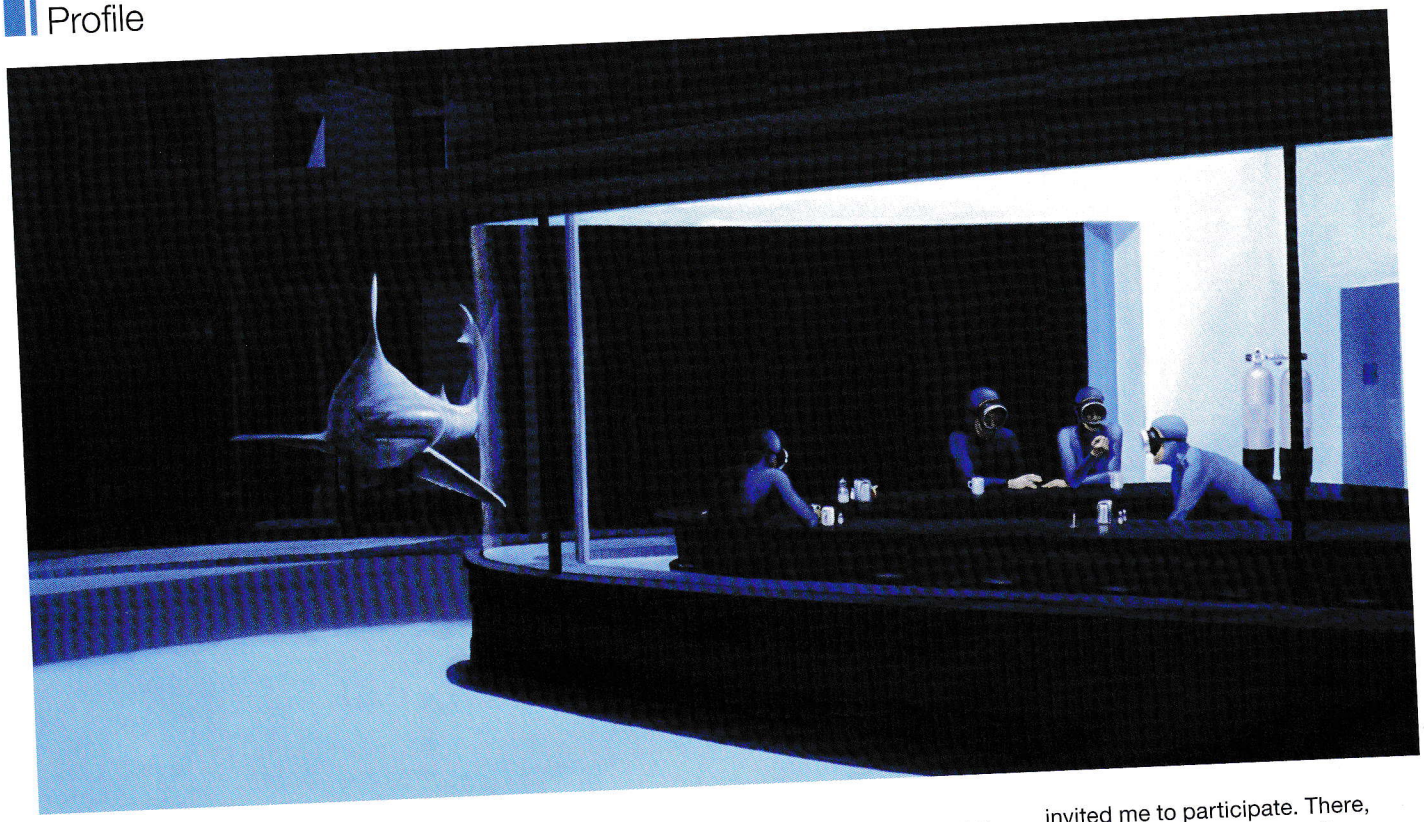
Another reason is because my neighbour, who was a diver, became my model and he owned those old suits. He also had two kids, who modeled for me as little divers.

Deep Dental Decay aka The Dentist is one of Pascal's most popular works

DIVER: Do you sometimes paint subjects that are not related to the underwater world?
PL: I do but the business side of my work means that I must paint what sells, which is my underwater work.

Also, I personally attend dive shows and exhibitions where I sell my work. Art is a form of communications and instead of being alone at my easel I like to be able to communicate with people and see their reactions. This opens my eyes and is an important part of what I do.

DIVER: Your paintings always tell stories as opposed to still life work or landscape?
PL: Yes, my paintings are



Painting: Courtesy Pascal Lecocq

narratives, I tell a story. But, interestingly, when you see my work you can tell your own story too, which could be different than the one I envisioned. As a viewer you are also creative. You may see something I haven't seen.

I don't do commission work but I feed my imagination from the stories told by people I meet.

DIVER: Your most famous painting is entitled La Corrida. Tell us about it.

PL: It has a connection with opera. In 1992, I had to make a set design about Bizet's Carmen, the most famous opera in the world. I had to learn about bullfighting, etc. I read a lot of books. I saw the powerful bulls and nice choreographic movements of the toreadors. This gave me THE idea; I made a sketch and eventually painted the Corrida with the great white shark as the bull.

I made prints, postcards and posters with it and they sold really well in Antibes. Famous people like Dr. Eugenie Clark and Ernie Brooks were crazy about the Corrida, like everybody.

To this day, it is still my most popular painting. It has become my signature. I feel like I made only one painting in my life.

DIVER: You said that the Corrida was a small painting (20"x16"), do you do larger formats?

"Instead of being alone at my easel I like to be able to communicate with people and see their reactions"

PL: When I paint, the whole painting is first done in my head, including its size. So, I may paint a larger format work but it has to be like that in my mind to begin with.

DIVER: What other paintings rank as number 2, 3, 4 in your work after La Corrida.

PL: The second one is Deep Dental Decay a.k.a. The Dentist. Then comes The Biker with Three Sharks. My pastiche of Edward Hooper Nighthawks has also been very popular. Oh God, a Seagull, featuring a diver swimming in the clouds looking at a seagull attracts attention and in my late paintings, the Curse of the Caribbean, featuring lionfishes, is the most popular. It is connected with the trouble we are having in Florida and the Caribbean with this invasive species.

DIVER: You moved to Florida in 2003, why?

PL: Encouraged by Eugenie and Ernie, I exhibited at DEMA 1998 for the first time. A man from the Uzzi garment and towel company in Florida asked me to my use my Corrida painting on his towels and invited me to participate. There, I met Armand Zighan from the Beneath the Sea show, who invited me to New York. Since I was doing more and more shows in the US, after a while I rented a house in Fort Lauderdale and started to work part-time from there. Eventually I bought a property and settled here for most of the year.

'C'est pas le moment de sortir', Pascal's homage to Edward Hopper's classic *Nighthawks*

DIVER: Talk to me about your technique, is it acrylic?

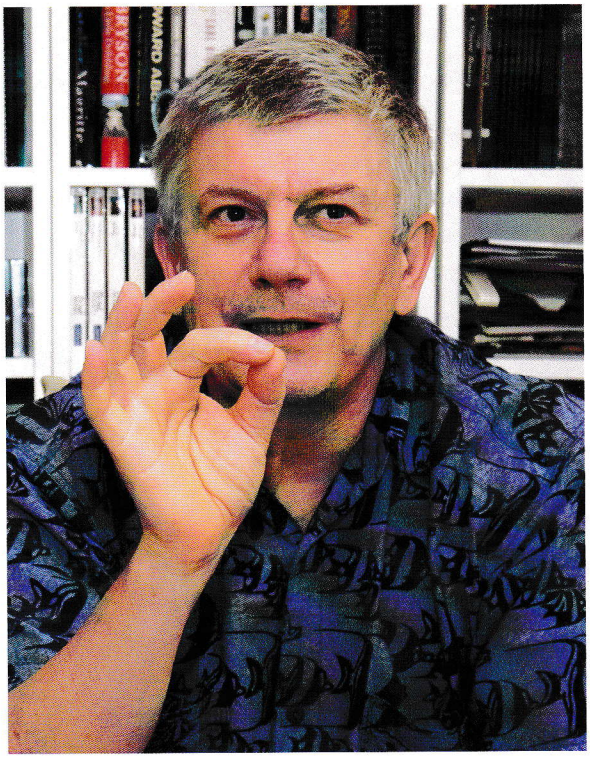
PL: No Way! I am a classic painter. I work with oil-based pigments just like the old Masters. The very technique I use was perfected at the end of the 1300's. It involves applying colour, then a coat of glacis, then more colour, followed by glacis, and so on. The different layers come from opaque color, in the background to successive coloured glazes more and more transparent (less pigment at the top).

This takes a lot of time. Most of my paintings take up to 18 months to complete. At the end of this time I may have spent the equivalent of one or two weeks on one picture. This is why I always have many different paintings in the works.

DIVER: Why is this technique so valuable to you?

PL: When you are painting, you are working with light, just like in photography. By alternating paint and glaze, eventually, the light

Painting: Courtesy Pascal Lecocq
Photo: Alary-Gilbert/SUB-IMAGES



penetrates through the different coats and is reflected on the backdrop, this is what brings depth to the picture.

Acrylic or water-based paints are opaque and flat media. Moreover, if you look at an oil painting reproduction on paper or on a computer screen you miss that crucial depth. This is why it is important to go see the originals in museums.

DIVER: Are there other advantages to oil painting, what is its value vs. other methods?

PL: With Acrylic I cannot refine the details as much as with oil. With the latter I can spend three hours working on an eye. Acrylic dries so fast that I cannot do that.

As I said, acrylic misses depth. Unfortunately, today, people are not educated to appreciate the value of the paintings found in museums, which is a big mistake because you miss a lot by not seeing original work.

If you want to see great work, look at paintings older than the 19th Century and you will see a difference. Go see Vermeer for example.

DIVER: What is the main drive in your work?

PL: An artist has a big ego. We are not regular people. We need to express ourselves to be. We exist before people are looking at us or at our work. My painting is my way to be, to live; I paint to be.

Also, because I learned about the masters and admired them, I wanted to see my name 'there'; there is a lot of vanity in this. It is vanity in the sense of being recognized, not vanity in the sense of being egocentric. Fortunately, I can make a good living by painting and I feel grateful for that.

DIVER: Your paintings carry a lot of subtleties, messages, and references, you kind of hide Easter eggs in them. Why?

PL: Since I am a painter of imagination, I can put whatever I want on canvas. I like to include many levels of interpretation. I work mainly with the golden ratio; I am a big user of this concept. I do it because this recipe gives you the right way to compose. The concept goes back to antiquity. Using this technique, your picture can still be bad, but not because of a bad composition.

Also, I like to play with numbers, 1, 2, 3, 5, 8, etc. It is connected with the Fibonacci series; I told you that I liked numbers. I have to include metaphysical meanings, quotes/references to well known painters.

I don't expect you to recognize everything but I think that I appeal to a larger audience this way. What I also like is that you are going to make your own painting by looking at it. Human beings are creative by nature. If you are thinking you are standing, you are living.

"I feed my imagination from the stories told by people I meet"

A painting of my painting materializes in your mind; we all see differently. For example, the blue you see in my painting is not the same blue I put there.

I also want to educate people; mostly with the pastiche. For example, Nighthawks is referred to as Boulevard of Broken Dreams, the latter already being a pastiche of Hopper's work. It is also a tribute to this artist who is, for me, the best American painter. Art is a great way to teach people.

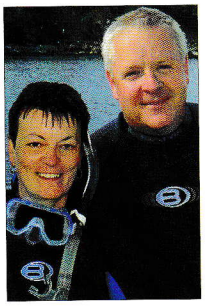
DIVER: What is the direction of your future work?

PL: I paint because I need to do it, it is in my genes. I like people to smile when they look at my work, I want them to learn.

Today, I feel we are somehow going back to the dark ages; I like the enlightening of the 18th Century, and this is my philosophy. Art is the best way to carry on this legacy. For example, I do a lot of work with kids, outside their schools. My goal is to familiarize them with the arts and the environment. I want to help them grow, to play with their imagination and keep on learning at the same time. [ ]

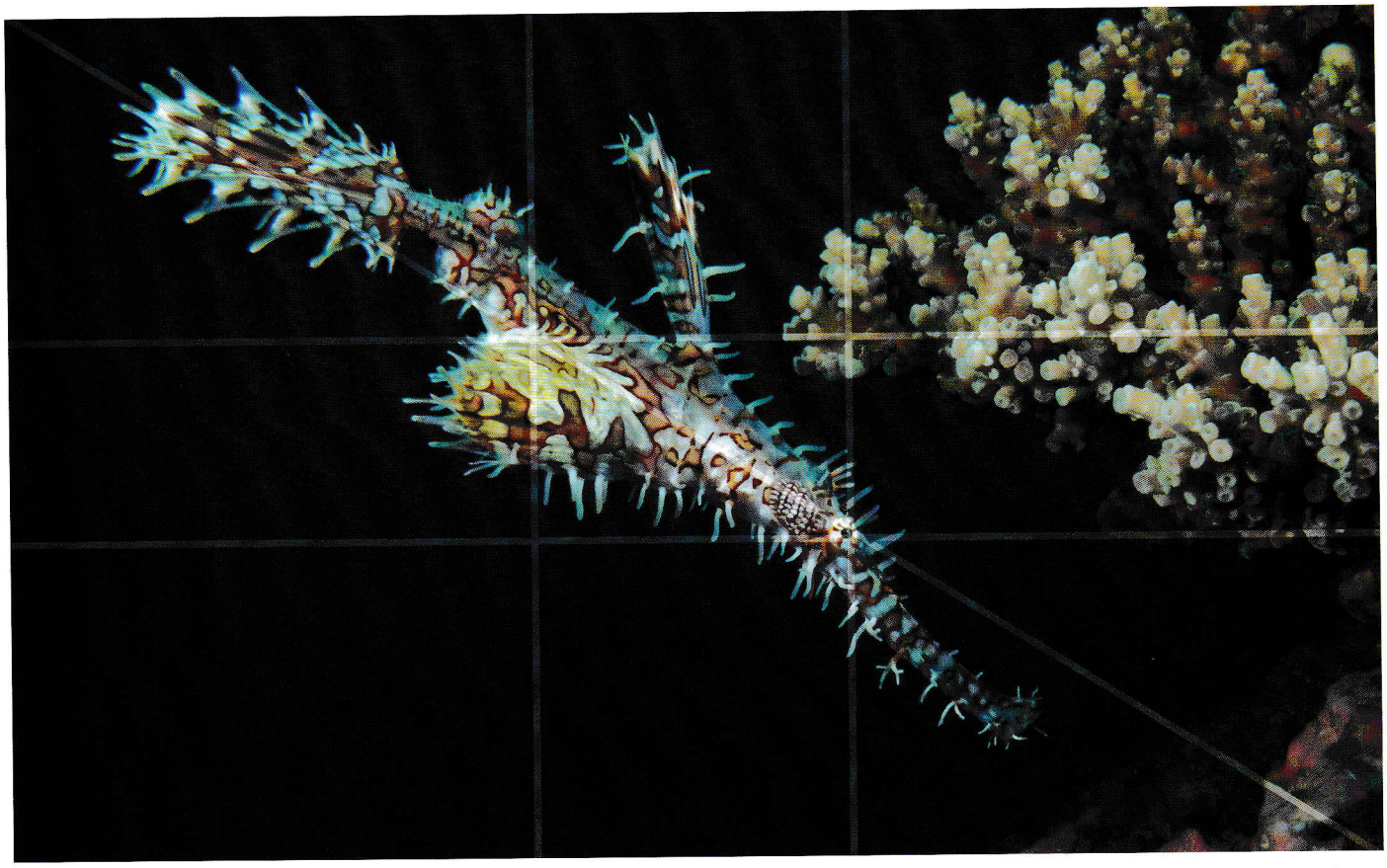
See 'Being Digital' on page 52 this issue to learn more about the golden ratio and the Fibonacci series

[To see more of Pascal's work: *www.pascal-lecocq.com*]



A Tool from Antiquity The Golden Ratio

By Michel Gilbert & Danielle Alary



Photos and illustrations: Alary-Gilbert/SUB-IMAGES

Since antiquity, a particular number has fascinated mathematicians, scientists and artists alike. It could help your photography!

What do Pythagoras, Euclid, Kepler, Da Vinci and Salvador Dali have in common? They all worked on or with the golden ratio, also known as the Divine Proportion. Let's see how you can use it.

The Ghost Pipefish is positioned along a diagonal and its eye is located at the intersection of the two lines on the grid. The image is cropped according to the golden ratio

The math

In mathematics, two quantities are in the golden ratio if their ratio is the same as the ratio of their sum to the larger of the two quantities.

The proportion of the image in Figure 1 uses this ratio.

The golden ratio formula reads:

$$\frac{a+b}{a} = \frac{a}{b} \stackrel{\text{def}}{=} \varphi,$$

Photographers being artists, we thought a pictorial representation of the golden ratio might help.

In addition to being cropped to the golden ratio proportions, Figure 1 (opposite page) shows the grid of ϕ (phi).

The image above is a cropped version of a standard dSLR image. It is slightly shorter on the vertical axis than the typical 2:3 picture.

As you can see, instead of dividing the frame in exact thirds, the grid ϕ uses the following ratio: 1:1.618. The lines intersect closer to the center of the image, where they form a square.

We can derive other patterns from the basic grid, such as the diagonals found in Figure 2 and 3.

Figure 4 illustrates what is known as the Fibonacci spiral, conceived by a XIIth Century Italian mathematician using golden ratio rectangles.

A natural vibration emanates from anything that is conceived with the golden ratio/Divine Proportion (thanks to Pascal Lecocq for his inspiration for this article and for spontaneously using the expression). It is found everywhere in nature, from some proportions of the human body to the shape of a nautilus.

There is something that even a person who's never heard of the concept feels when viewing art or living creatures where the golden ratio comes into play.

The golden ratio has its place in underwater photography. However, using it means facing two difficulties:

First, you cannot tell fish #1 to swim to an exact position and then say to fish #2 that it must move to the perfect spot. Painters have a real advantage since they literally can

position their subjects in specific locations and draw them using the ideal proportions.

Second, where painters can use a ϕ grid to sketch; we photographers have yet to find a sensor built to the exact proportions of the golden ratio, and no viewing screen includes the ideally positioned grid elements that one could use to compose a picture.

Using the golden ratio

Working topside, you can carry cheat sheets to help visualize a composition based on the golden ratio. Underwater, things get a little more difficult.

We suggest practicing on land with reference tools. Developing 'muscule memory' using ϕ will make things easier once immersed with your camera. Over time, you will naturally visualize your composition using an approximation of the perfect grid.

Golden post-processing

As most readers know, fancy composition is a form of luxury seldom available in the Silent World. Fortunately, technology comes to the rescue.

All the pictures we admire are the result proper post-processing. Beyond the brightness, colour, sharpness, noise suppression and other adjustments involved in this process, cropping plays a key role. This is where you can use the golden ratio on existing images, perfecting your fieldwork or recomposing the whole picture to better carry your message.

Instead of drawing lines with a felt pen on your 5K Apple Retina display, rely on Photoshop and Lightroom or other image processing software that incorporate built-in functions to help compose your final images.

If you want to go to the ultimate stage, begin by cropping the image using the golden ratio.

Then, once the crop tool is selected, use the overlay option icon at the top of the image where you find the contextual menus (see Figure 5). The overlays include different shapes and grids; among them, the golden ratio basic grid as well as the Fibonacci spiral, triangle and diagonal lines. The different lines and/or grids help in locating key elements of your subjects when you recompose the image.

Our limited space does not allow us to enter into all the subtleties involved in using the golden ratio. But beware, the Photoshop diagonals and triangles are not perfect for all images. However, this is a good start.

Experimenting with different overlays will teach you what is ideal for any specific image. Better still, over time, the grids will automatically appear in your mind when you compose an image underwater.

A tool is a tool

Despite its interesting applications, the golden ratio remains a tool. After all, you are telling stories, conveying emotions through imagery. Breaking the 'rules' often becomes the most efficient method.

The golden ratio cannot produce a masterpiece by itself. It may help by eliminating guesswork in terms of locating key features in your images. Another benefit: it forces you to stop, visualize composition and shoot: three steps that mean better images.

And think about it, your crayfish picture may end up with a little bit of Da Vinci's genius in it!

Happy bubbles! [ ]