Les gens bien productions & Andromède Océanologie présent

THE DEEP MED

A FILM BY GIL KÉBAÏLI

written by Gil Kébaïli and Laurent Ballesta

90' - 4K

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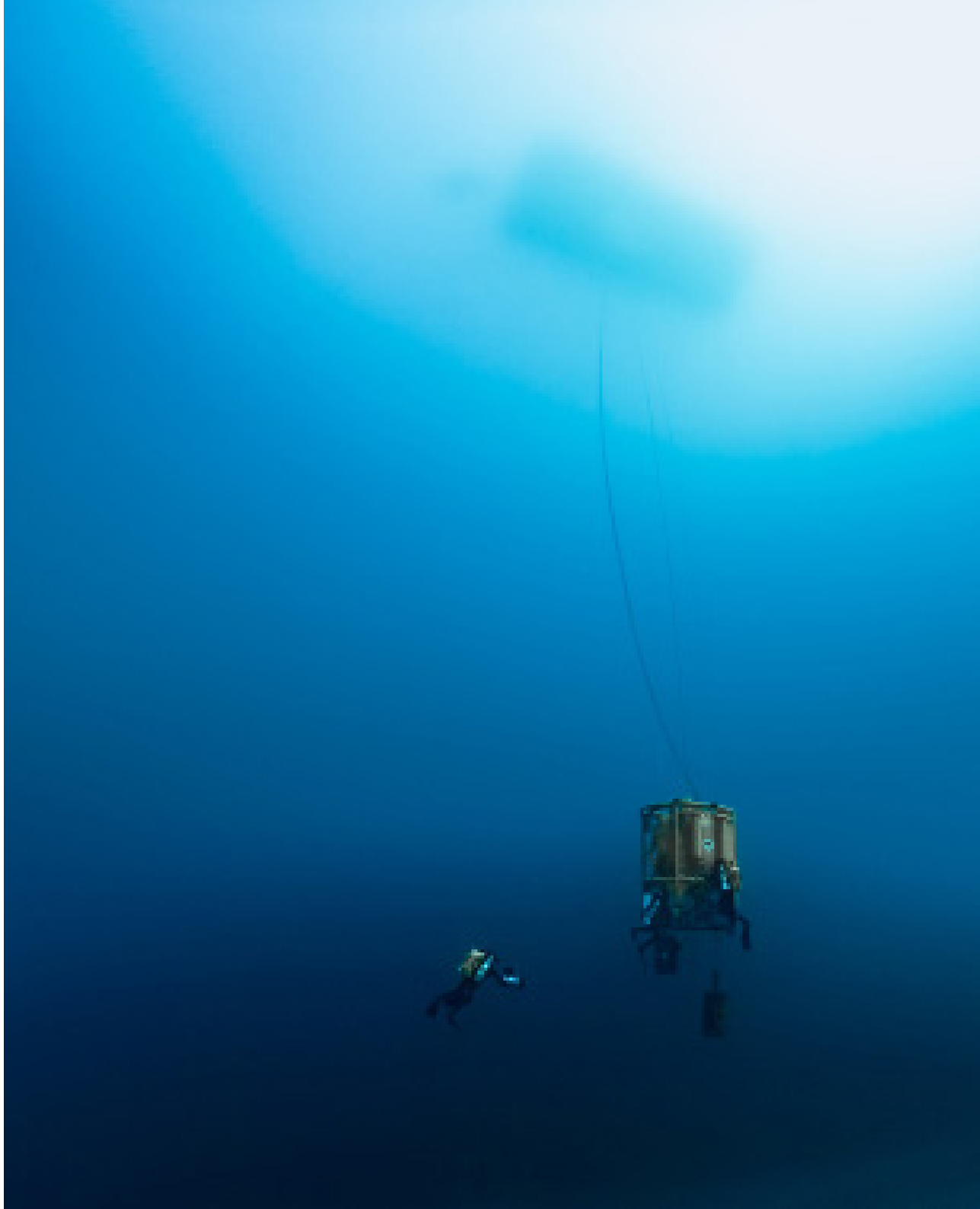
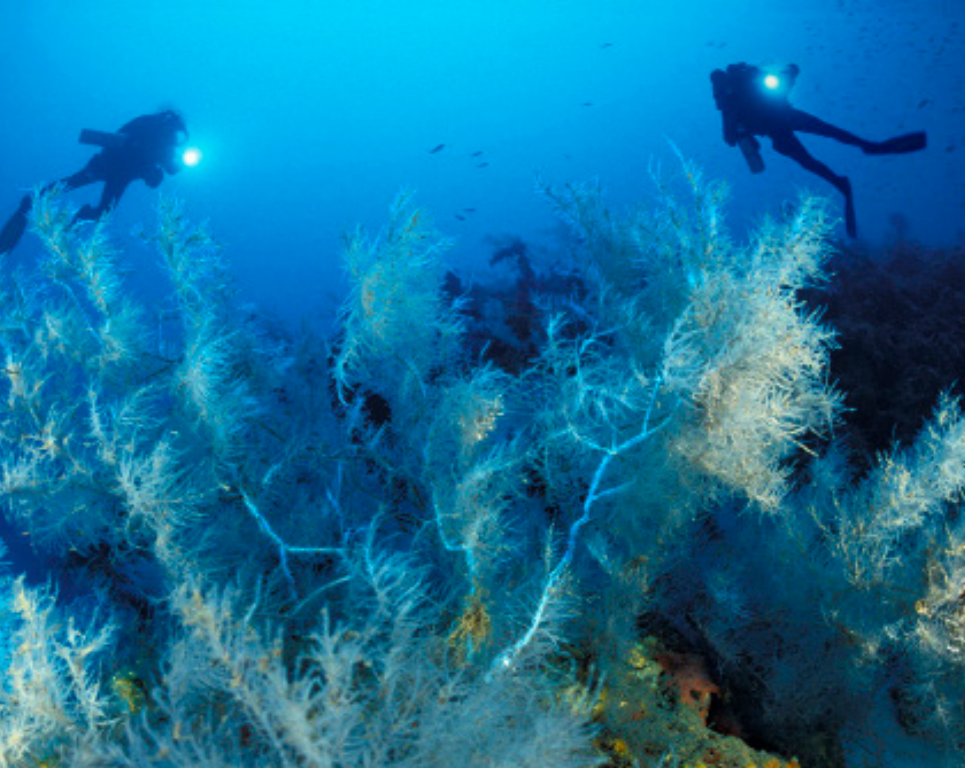




LOGLINE

After “700 Sharks”, “Diving with the Coelacanth” and “Expedition Antarctica”, Laurent Ballesta has yet again challenged himself to a new world record: spend 28 days at a depth of 100 meters, pushing the limits of his body to reveal the luxuriant and unknown depths of the Mediterranean.

SUMMARY

The Mediterranean. Because people have been travelling there for thousands of years, it is believed to be without secrets. And yet, far below its surface, lie vast unexplored territories, luxurious gardens worthy of the finest tropical coral reefs. These natural wonders are inaccessible to the traditional diver, in a twilight zone, between 60 and 120 m, where there’s less than 1% of sunlight. If diving at such depths is always a challenge, staying there is a fantasy, a utopia that becomes reality in Planet Mediterranean.

In the tradition of Commander Cousteau and his «houses under the sea», the team of diver-photographer Laurent Ballesta is undertaking a new world-record setting mission in July 2019: spend 28 days in a pressurized 55-sq-ft cabin allowing them to dive into the 100m zone as they wish, in complete freedom and without time limit.

From Marseille to Nice, the 4 adventurers will reveal the treasures of biodiversity hidden in the Mediterranean and study the unknown ecosystems of its depths. A human, technical and scientific challenge to study the unknown ecosystems of the Mediterranean’s depths.

CONTEXT

Since 2013, Laurent Ballesta and his teams have been leading major scientific expeditions to study specific phenomena on all the seas of the globe. The missions are chosen on the basis of their naturalistic interest and develop around three axes: a **scientific challenge,** a **diving challenge** and a **promise of images.**

After diving with the coelacanth in South Africa (*Gombessa I*), studying grouper reproduction in French Polynesia (*Gombessa II*), the deep waters of Antarctica (*Gombessa III*), grey shark hunts in French Polynesia (*Gombessa IV*), Laurent Ballesta will lead a major expedition in the Mediterranean (*Gombessa V*) in July 2019.

A SCIENTIFIC CHALLENGE

One of the objectives of the Gombessa V mission is to obtain a **first assessment of the biodiversity and water status of the twilight zone** (depth of about -100m). This area is unknown because of its difficult access, however, it could be essential to the functioning of the Mediterranean (refuge area against human pressures and global warming, spawning grounds, rare and/or unknown species, carbon flows...). It shelters coral reefs formed by the accumulation of calcareous algae skeletons. This key Mediterranean ecosystem is home to 1700 species and is equivalent to coral reefs in productivity and beauty.

This expedition will therefore be an opportunity to map ecosystems in 1:10,000 and 3D, take physical measurements in water (temperature, brightness, sedimentation, PH...), inventory new species, understand the role of the coralligenous in the dynamics of climate change, take environmental DNA samples and bioacoustic measurements, define the level of chemical contamination in deep waters, etc.

Gombessa V will involve researchers from different disciplines and nationalities who will supervise the scientific protocols (photogrammetry, benthic bells, environmental DNA, acoustics...) that divers will set up.

A DIVING CHALLENGE

This unique expedition is made possible by the unique combination of two types of dives: scuba diving and saturation diving.

Scuba diving developed in the 1950s under the leadership of Commander Cousteau. The autonomous suit offered divers complete freedom of movement conducive to exploring the seabed but with a diving time autonomy reduced to 2 hours. In the early 2000s and with the advent of technology, electronic recyclers developed and considerably increased the divers' autonomy (up to 6 hours). Despite these advances, autonomous rebreather divers cannot avoid decompression stops, i.e. the time spent at certain depths to reduce the nitrogen and helium levels remaining in human tissues. For example, staying 20 minutes at 100 meters requires 4 hours of decompression time.

Saturation diving has existed since the 1960s and has been developed in particular to free itself from stops and avoid decompression sickness. Originally intended for the exploitation of underwater resources, more particularly hydrocarbons, it consists in keeping worker-divers under pressure in a life chamber throughout the duration of their work. Dive times are no longer limited but the diver, when he goes out to work, is permanently connected to his life box by an «umbilical» cable, thus limiting his movements to a few dozen meters. The decompression is only done at the end of the work, in the box, and can last several days. France was a

pioneer in saturation diving and has trained thousands of divers from all over the world. The Compagnie Maritime d'Expertises (COMEX) and the National Institute of Professional Diving (INPP), based in Marseille, have invented and patented saturation diving techniques. Today, INPP remains one of the last training centres in the world.

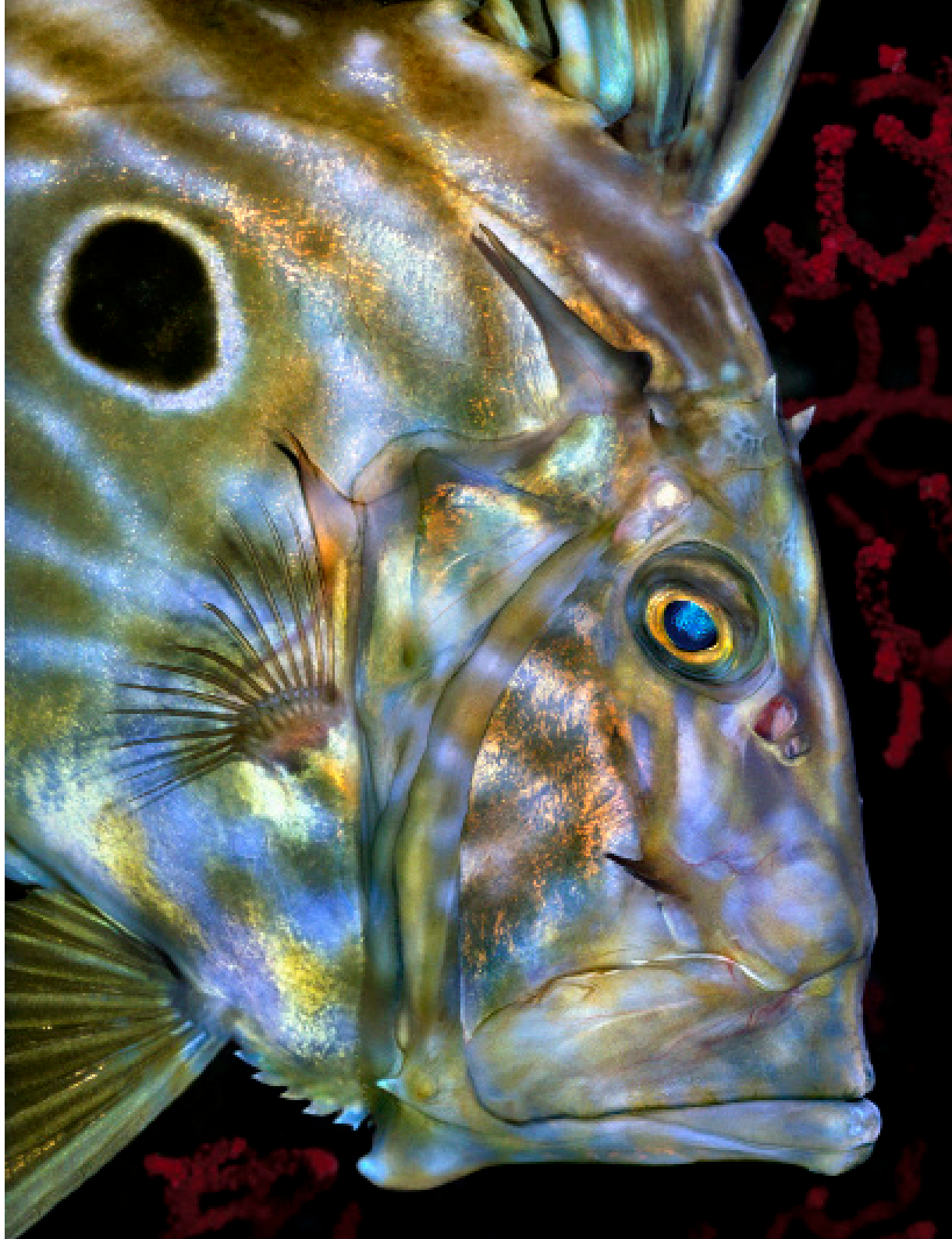
For the first time, these two types of diving will be combined in the Gombessa V expedition, which will undoubtedly be a landmark in the history of French diving and underwater exploration.

A PROMISE OF IMAGES

Can we still produce unpublished images on our territory? Can we still surprise the public with its own natural heritage? These questions will also be the driving force behind the expedition.

Although coral reefs are difficult to access, their luxuriance is well known. The Gombessa V team will have the opportunity to spend hours there to bring back the best evidence.

Creatures from the depths, forests of plants, forgotten wrecks... the **potential for new discoveries** and images is immense!



THE PROTAGONISTS

Laurent Ballesta. Naturalist photographer, expedition leader. Holder of a master's degree in marine biology, Laurent is one of the first divers in France to use the electronic mixture management recycler since 2000. Between 2002 and 2015, he led more than 20 deep-sea diving campaigns in the Mediterranean Sea, at more than 80m, and in 2007, he reached a record depth of 200m to do his job as a naturalist photographer. In 2010, he went to South Africa to realize an old dream: to dive alongside the coelacanth, in -120 m depth. Constantly constrained by the hours of incompressible stops inherent to deep diving, he imagined the marriage of industrial diving to scuba diving from 2001.

Yanick Gentil. A cameraman diver, he has been part of Laurent's team for 11 years. A renowned underwater cameraman, he is the cameraman of the first sequences of the reproduction of Fakarava groupers filmed at 1000 frames per second or of the night hunts of grey sharks. He also accompanied Laurent on the deep diving campaigns in the Mediterranean, and at -120 m for filmer the very first images of the coelacanth made by a diver.

Thibault Rauby. Instructor diver, lighting assistant. A reference in terms of «tek diving», Thibault is a rebreather instructor and has worked on various audiovisual projects, including each of the Gombessa Expeditions documentaries. He is an asset to the team through his almost daily practice of diving and his many technical skills. He also holds a master's degree in marine biology.

Antonin Guilbert. Marine biologist and professional diver. He holds a Master's degree in Marine Biology from Heriot-Watt University in Edinburgh, Scotland, and has applied his skills by working at the Smithsonian Institute in Panama and then in French engineering offices. Working since 2007 in Andromeda as a research fellow, he has participated in numerous marine biocenosis mapping and analysis campaigns covering more than 300 km of coastline in the Mediterranean, and has worked on several studies relating to quality monitoring and marine environmental management.

THE PROTAGONISTS

THE SURFACE

Théo Mavrostomos - Teaching executive at INPP. Supervisor of the operation of the saturation module. A former professional diver, he holds the world record for the deepest experimental diving at -701m. To supervise the 4 divers, he will be assisted by 6 other INPP diving technicians.

Jean-Marc Belin - Diving director and decompression specialist. He is a scuba diving instructor and has worked alongside the Gombessa team since its very first missions.

Stephen Mauron - Captain of the Zembra, the scientific catamaran of Andromeda Oceanology. He is also a professional and assistance diver.

Cédric Gentil - Professional diver and rescue diver, he coordinates the logistics of all Gombessa expeditions.

Manuel Lefèvre - Camera operator, dronist, video technician, he has been accompanying all Gombessa expeditions since 2013 and is in charge of finding all the technical solutions.

THE SCIENTISTS

Julie Deter - Scientific director of the Gombessa V expedition, she is a researcher in marine ecology. She is interested in the impact of global change on marine biodiversity.

Gwenaëlle Delaruelle - Marine biologist, specialist in biological monitoring networks of Mediterranean ecosystems.

Dr Lucia Di Iorio - Researcher in eco-acoustics, scientific manager at the Chorus Institute of Grenoble.

Dr Florian Holon - Researcher in marine ecology, professional diver, he is co-manager of Andromede Oceanology. He coordinates photogrammetry programs on the expedition.

Pr Eric Parmentier - Researcher in functional morphology at the University of Liège. It seeks to determine the fundamental components of acoustic communication in fish

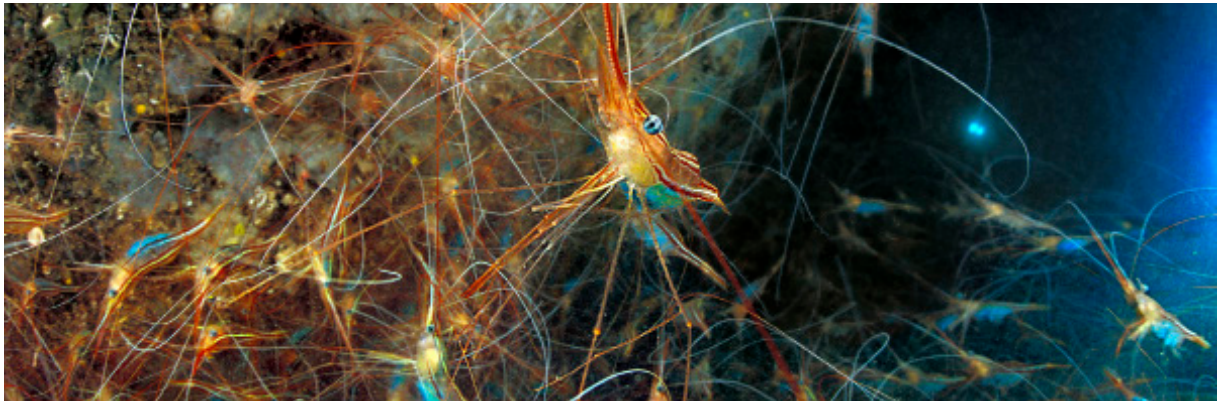
Dr Nicolas Mouquet - Researcher in theoretical ecology, CNRS Research Director at the MARine Biodiversity, Exploitation and Conservation Laboratory in Montpellier

Pr David Mouillot - Researcher in community and conservation ecology. He will be in charge of the environmental DNA on the mission.

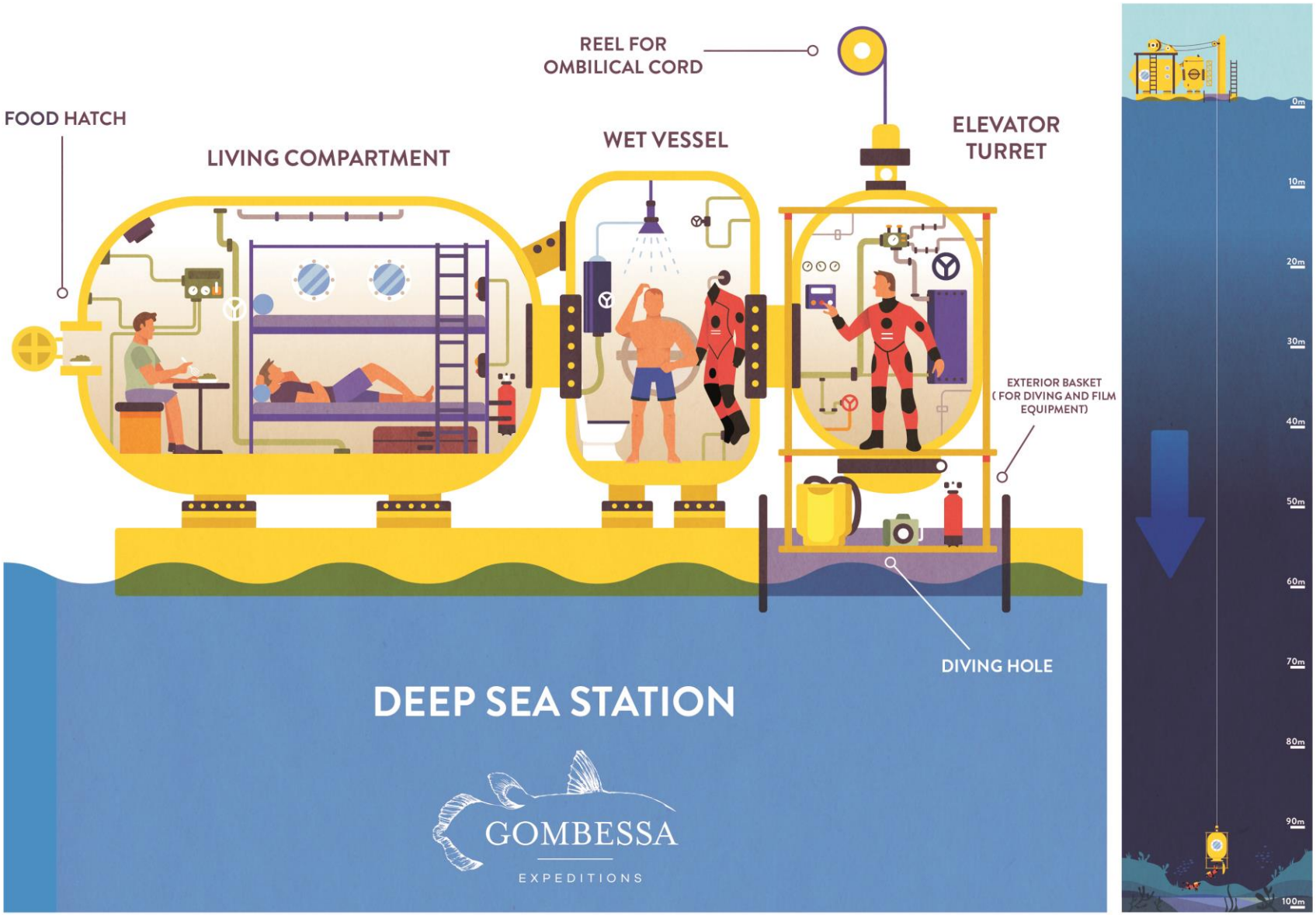
Pr Costantino Balestra - Professor of Physiology, Director of the Laboratory of Environmental and Occupational Physiology at the Brussels Brabant University (Brussels), Vice-President of the Belgian Society of Hyperbaric and Underwater Medicine

THE SETTING - LANDSCAPES

THE SETTING - DEEP SPECIES



THE SETTING - THE DIVING STATION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OMBILICAL CORD
FOOD HATCH
LIVING COMPARTMENT
WET VESSEL
ELEVATOR
TURRET
EXTERIOR BASKET
(FOR DIVING AND FILM
EQUIPMENT)
DIVING HOLE
DEEP SEA STATION
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0m
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THE STORY

TEASER

The film opens with magnificent underwater landscapes, lush and colourful, with the appearance of tropical reefs. Multicoloured corals, sponges, anemones, giant gorgonians... And hundreds of fish of all sizes that move through this fixed maze of life.

A halo of light moves... At the end of this halo, an underwater projector in the hand of a diver... Behind him, 3 other divers furrow the bottom, equipped with lamps. In the distance, we can see a strange yellow ship on the sandy bottom.

At a depth of 100 metres, where the sun's rays almost no longer reach, there are water gardens like no other... Multicoloured reefs, populated by amazing species, some of which have never been studied before...
For the very first time, four extreme divers will explore in detail these previously inaccessible biodiversity paradises...

From the lush seabed, the camera moves up vertically, with the lens facing the surface. Light is becoming more and more present. In a sequence shot, in a glare of light, the camera comes out of the water and continues its movement. She crosses a strange cabin, inside which appear 4 berths and a very Spartan decor. The camera then «crosses» the cabin ceiling and continues its ascent. Then appears the surface of a barge, on which rests this strange box, whose yellow color contrasts with the surrounding blue.

They will accomplish an unprecedented mission, a real human and technological challenge... They will be the first to testify to the richness of this unknown world...

The camera rises, and with a slight movement, reveals the creeks with its bathers, and in the background, the city of Marseille.

This major expedition is not taking place in a remote tropical region never visited by man before... On the contrary... It takes place at our door... On the edge of the largest closed sea in the world... The Mediterranean.

Off the coast of Marseille, Toulon, or Nice, the one we call the French Riviera, this coast of our holidays that we believe we know well, hides treasures of biodiversity... A stone's throw from the beaches invaded by visitors, under these blue sapphire waves, it is this unknown planet that is about to be explored...

TITLE :
GOMBESSA V
PLANET MEDITERRANEAN

AN UNPRECEDENTED EXPEDITION

The film begins underwater. A strange yellow ship slowly descends along a cable... The camera accompanies it, then films its arrival on sandy ground. You can see the shadow of a man's face when he looks out the window. The camera approaches the porthole, then swings inside the yellow ship.

Images of GoPro fixed all around the turret take over, like video surveillance cameras. We then discovered 4 men in diving gear, looking serious and focused.

We are 100 meters below the surface of the water... These 4 men are the voluntary prisoners of an unprecedented adventure... an expedition to the depths of the Mediterranean... A stay in eight closed in a glass and steel cage, from which they can only come out to immerse themselves in the deep sea...

After a quick radio exchange, we follow the divers' equipment, then their exit into the great depths. For 20 days, Laurent Ballesta, Antonin Guilbert, Thibault Rauby and Yanick Gentil will accomplish an unprecedented mission: they will explore, inventory and analyze an unknown underwater world... The one located beyond 80 meters deep. Where no diver has ever stayed more than a few minutes....

We leave the divers who move away in the darkness of the deep sea to reach the surface. A cartography against a background of aerial images describes the expedition's itinerary: the first stage of their adventure is at the foot of the imperial islets, in the heart of the Calanques National Park, off Marseille. The divers will then follow the Mediterranean coast for 3 weeks... They will cover 300 kilometers between Marseille and Menton, and will explore about fifteen sites per 100 meters of depth.

Divers are not alone in this adventure. We discover the surface device that accompanies them: a catamaran, a scientific base hosting a team of researchers, and a barge pulled by a tugboat, on which rests a very special device: a strange spacecraft of the 1970s, called the «containment cell». It is a pressurized vessel with an atmosphere of helium and oxygen, specially developed for expedition by the National Institute of Professional Diving.

Thanks to a 3D animation, we discover the structure of this pressurized life station: It includes a first module 5 square meters, which is the place where divers live. Inside, 4 berths, a small table, a few shelves... The minimum necessary to live for 3 weeks in total confinement. Next to it, the «wet module»: bathroom, toilet, and area where divers will dress in their suits before diving. Finally, the turret is the most sensitive module of the station. This mobile steel sphere allows divers to descend to a chosen depth and then ascend at the end of their exploration.

Back on the barge in real images, we meet some members of the expedition team. Theo Mavrostomos, a former professional diver and holder of the world record for deepest diving, is in charge of managing this pressurized cabin, a central element in the exploration of the great depths. Florian Holon and Julie Deter, researchers in marine ecology, explain the scientific issues of this adventure. Today, the Mediterranean seabed is widely studied by scientists, but only between 0 and 40 metres... The aim here is to widen the field of knowledge by accessing a territory where almost no one has gone so far.

THE CORALLIGENOUS, AN UNKNOWN UNDERWATER PARADISE

We meet the divers at the bottom, and accompany them in their discovery of the imperial islets, off Marseille. In 80 metres of water, an astonishing life is revealed under the spotlight. A multitude of species have taken up residence on the rocky walls, offering a wealth of shapes and colours to the eye. Elegant red gorgonians more than one meter high... Pink anthias flickering... silvery sars with black heads...

Less than 1% of the light from the surface reaches this depth. We are in what specialists call the «twilight zone». A territory where conditions hardly change: little light, a constant temperature all year round... And above all almost no human or meteorological disturbance. Here, no storm, no boat anchor, no fishing net disrupts the stability of ecosystems.

A little further on, the rock changes... It now looks like petrified lichens with purplish tones... This colour is that of red calcareous algae... Here we are on what is called a coralligenous reef... This is a gigantic accumulation of limestone deposits manufactured by the building organisations. Red algae mainly, but also corals, sponges, molluscs, foraminifera... Over time, these underwater builders have created impressive buildings several meters thick.

Corallogenic assemblages are a real patchwork of micro-habitats and species whose richness is equivalent to that of tropical reefs. We're off Marseille, and it's like the Red Sea! But these «hotspots» of biodiversity, these natural jewels of temperate zones, are still practically untouched by any scientific knowledge... Quite simply because they flourish far from the coast, and especially, beyond the depths accessible to traditional divers.

At each stopover of the adventure, we discover this incredible biodiversity hidden in the depths of the Mediterranean. We accompany divers in their many explorations between Marseille and Nice... Equipped with electric thrusters, they move in a fluid and fast way, and take us from one coralline massif to another. Before our eyes are revealed hundreds of amazing species. Here yellow, white, pink and red gorgonians... There, bryozoraria with delicate shapes... Here again, sand tongues bordering the living rock and sheltering impressive banks of red mullets and silver saars... In a profusion of shapes and colours, the Mediterranean twilight fauna is revealed in all its beauty and diversity.

In the middle of the night, the divers also take us on a new dive. A nocturnal immersion to observe a world never before studied, very different from that of the day. Long-limbed octopuses, long-clamped galatea, picarel fish in striped pyjamas, Dalmatian slugs, multicoloured veined

squid... The inventory of fascinating species inhabiting the Mediterranean night is only just beginning...

LIFE IN THE CLOSED ROOM

Images from GoPro cameras fixed in the turret and the various modules of the station show us throughout the film the daily life of divers trapped in their prison under pressure.

It is here that we really get to know these 4 key characters of the expedition: Laurent Ballesta, naturalist photographer and expedition leader; Antonin Guilbert, marine biologist and professional diver; Thibault Rauby, instructor diver and lighting assistant; Yanick Gentil, professional diver and underwater camera operator.

We also discover the consequences of the screw in camera in a modified atmosphere and under considerable pressure. In the life module, all senses are attenuated, and the voice of the adventurers is totally transformed. A single rule for dialogue: short sentences, precise words... to be repeated several times to be well understood...

As the documentary progresses, sequences of life inside the station punctuate the narrative. Sorting photos, reading, eating, small cognitive exercises... But also managing tensions or health problems... Spending 3 weeks locked up for four in a few cubic meters is in itself a real adventure!

THE BARGE, THE REAR BASE OF THE CAPSULE

Enclosed in their pressurized chamber, Laurent Ballesta and his companions are entirely dependent on the rest of the team. And the logistics required to allow divers to stay for hours per 100 meters of depth is considerable. On board the barge, the activity never stops. It is necessary to prepare the equipment, process the collected data, monitor the weather conditions and the proper functioning of the pressurized modules... It is also necessary to organize in detail the daily work in the great depths.

Jean-Marc Belin, Cedric Gentil, Jordi Chias, Stephen Mauron and Thomas Pavy are in charge of this complex management. We will discover their daily work, their difficulties, their fears and their joys throughout the adventure. With Théo Mavrostomos, the supervisor of the saturation module operation, they are responsible for the success of the mission, and the safety of the divers. They will sometimes have to make important decisions about the mission of the 4 adventurers. Enclosed in their capsule, Laurent, Thibault, Antonin and Yanick must be pampered, preserved and given the clearest possible instructions. The fatigue of long hours spent underwater leads to a mandatory rest for the body and mind. There is therefore no need to generate debates or concerns about the organization of the expedition in this confined space of cohabitation....

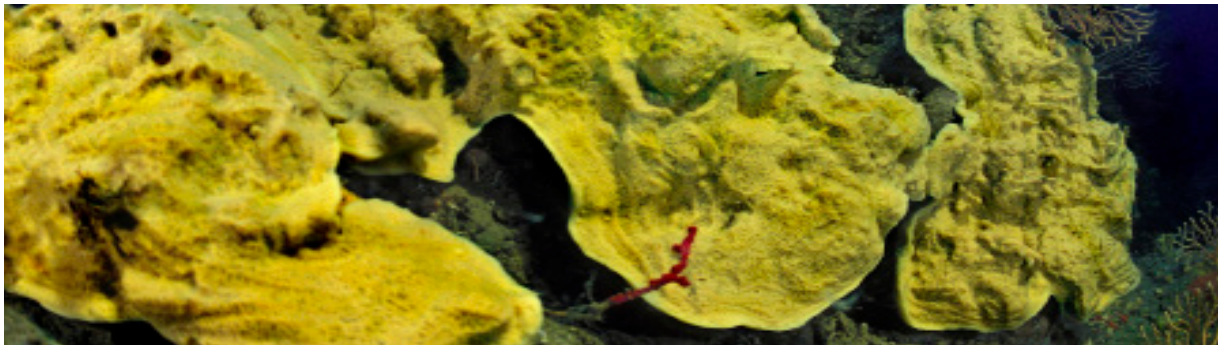
MAPPING OF AN AQUATIC JUNGLE

Underwater, the invertebrates attached are countless. A comprehensive survey of the species present is not possible with simple cameras. Antonin Guilbert was therefore entrusted with another mission: to carry out a complete photogrammetric survey of all the areas explored. He has to take hundreds of photos from different angles, in order to reconstruct the reefs on the computer.

We accompany Antonin and his companions in their meticulous work of underwater photography, then we discover in 3D the impressive reconstructions of some coralligenous massifs. Each coral fragment, each anemone, each sponge, is visible with surgical precision.

The scientist Florian Holon will show us in real time some components of the massifs and will be amazed with us by the photogrammetry rendering. We can indeed see the polyps of a black coral in detail while it is at a depth of 100 meters....

Since 2014, the date of the first detailed and continuous mapping of French coastal habitats in the Mediterranean, we know that the 1700 km of French Mediterranean coastline shelters more than 2000 hectares of coral reefs up to 80 metres deep. But beyond 80 metres, no such detailed maps have ever been made. Thanks to their work, the 4 divers will undoubtedly contribute greatly to a better understanding of these deep ecosystems, the great forgotten of the Mediterranean.



THE «BREATHING» OF THE CORALLIGENOUS

In these never before studied twilight zones, everything remains to be discovered... The study of the coralligenous must therefore be carried out according to several complementary approaches to understand this environment in a global way.

On several carefully selected sites, exploration will thus take place simultaneously at two levels in the same water column. While Laurent, Yanick, Antonin and Thibault will dive to 100 meters, as every day, 3 other divers will dive from the Zembra to descend to about 30 meters deep. The goal: to compare the functioning of coral reefs on the same rocky drop-off at both depths.
Divers take with them funny aquariums equipped with a rubber skirt and covered with probes. These are called «benthic bells». Placed on a reef fragment, they will measure in real time the gas exchanges that take place there, and in particular the emissions and absorptions of oxygen, methane and carbon dioxide. Valuable indicators of reef breathing.

The scientific objective is twofold: first, researchers simply want to understand the general functioning of these ecosystems, whose gas exchanges have never been measured, neither at depth nor at the surface. Do they consume CO2 and release O2 like all plants? Does the

whole ecosystem lead to a balance between emissions and removals? And above all, are the exchanges identical at 30 meters and 100 meters?

These chemical analyses may seem very specific... But they have an important stake: if we discover that coral reefs are what we call carbon sinks - that is, they absorb more CO2 than they emit, like forests for example, this will be a very good argument for better preserving them in the future. Beyond its beauty and scientific interest, the environmental interest of an ecosystem always weighs in the balance when it comes to launching conservation programs...

MUSIC FROM THE WORLD OF SILENCE

Divers will not only contemplate and photograph the coralligenous... They will also listen to it. Lucia Di Lorie and Eric Parmentier, two members of the «surface» team, are specialized in «bioacoustics». In other words, the study of the sounds emitted by natural ecosystems. For the first time, deep-sea music will be recorded using a specific device: an «acoustic pyramid».

Immersed for 24 hours in the heart of a coralligenous, the pyramid will continuously record, in 3 dimensions, all the sounds emitted by the reef. Deciphering the origin and intensity of each noise will allow us to create an ultra-precise sound mapping, which will materialize before our eyes thanks to an elegant graphic design.

This in-depth acoustic work is a new scientific discipline, which reinforces the work of monitoring biodiversity. Thanks to this technology, scientists will be able to monitor coastal control sites to study their sound variations over several years. Later, with more experience and modes of comparison, they will even be able to judge the evolution of the state of health of marine ecosystems simply by listening to it!

While the sound maps produced by the pyramid make it possible to assess the biodiversity of an ecosystem, they have a limit: it is impossible to identify the species that cause the noise heard... To do this, the diving team is therefore responsible for deploying another system: directional microphones coupled to cameras. Thus, a recorded sound will be associated with an image... Undoubtedly that of the animal that emitted it... The objective of this experiment is to build a sound bank of great depths, and to compare it to those already existing for reefs closer to the surface.

THE TWILIGHT ZONE, A REFUGE FOR THREATENED SPECIES?

The twilight zone, in the deepest depths where darkness reigns, still conceals many unsuspected treasures... Thanks to photogrammetry and acoustics, the population of these fabulous ecosystems will soon be better understood... But even by staying underwater for several hours to hunt down the slightest animal to capture the shot, even by recording the sounds of the reefs for days on end, divers will only be able to have a fragmented view of the abundant life that reigns here.

So how do you recognize all the animals that hide at the slightest danger? How do we identify those who have passed through here and left? How to understand the population dynamics at the heart of the coralligenous?

It is genetics that will allow researchers to know more... Underwater, individuals permanently lose mucus, urine or scales... In other words, DNA. It is found in the water, and persists in it for about 48 hours... Divers will therefore have the task of collecting large water samples, containing

the genetic signatures of hundreds of species.

On board the Zembra catamaran, Professor David Mouillot is in charge of the analysis of this underwater environmental DNA. Its primary aim is to identify as widely as possible the species living on coralline massifs, by comparing the DNA collected with that of the DNA banks already existing for the Mediterranean.
Thanks to DNA, scientists also hope to answer another crucial question: does the deep coralligenous play the role of a refuge zone for surface fauna? In the face of human pressures from tourism and fishing, and the warming of surface waters, could these remote, colder, more stable areas accommodate species that do not find in the upper layers the conditions necessary for their survival?

On several sites throughout the expedition, water withdrawals are planned at depth, but also at the surface, around 30 metres. By comparing the DNA of populations at both levels, researchers hope to obtain answers. If the same species are found, it will mean that there is mixing between the surface and the great depths. Otherwise, it will mean that species in the shallow area are condemned to remain there... And if conditions change too dramatically, to disappear forever...

DEEP-SEA POLLUTION

In the Mediterranean, the phenomena that threaten underwater fauna are numerous... And pollution is one of the most striking. At the bottom of the Mediterranean Sea, there are not only treasures of biodiversity... The 4 divers will also explore the surroundings of an «emis-

sary»: a pipe that carries urban waste from wastewater treatment plants as far and as deep as possible into the sea.

Despite their passage through a wastewater treatment plant, the water that arrives here is unfit for consumption, or even toxic. Their impact is reduced thanks to the dissolution in seawater... But to what extent? What are the consequences of these polluting discharges on the surrounding ecosystems?

Divers are taking more water and sediment samples. Once analyzed, these samples will provide a better understanding of the extent of pollution along this overcrowded coastline....

Aerial images then follow those of the desolate bottoms. The landscape scrolls by and offers the viewer a mixture of nature and sprawling urban areas. Beaches full of people, swimmers by the sea, pleasure boats and fishing boats...

Seen from the sky, it is very difficult to imagine how much human activity can impact marine life in depth... And yet, the spectacle observed by Laurent Ballesta and his adventure companions is the direct consequence of this excessive urbanization...

CAP D'ANTIBES: AN UNDERWATER FOREST

Off Antibes, the expedition team sets off in search of a rare and very unfamiliar ecosystem in the Mediterranean: kelp forests.

These large brown algae are cousins of those that are well known on the Breton coast. Here, they are called Rodrigues kelp. Rarer because they are much deeper, we know very little about these forests and their dynamics... Where do they grow? How do they reproduce? Are the different forests from the same population or are they completely isolated?

The camera flies over this impressive forest dancing in the current. One of the divers takes a small piece out of his bag, and makes small holes in the kelp leaves. Thanks to the collection of these small samples, in-depth genetic analyses will be carried out for the first time. Soon, these vast expanses will unlock some of their secrets.

In the intertwining of leaves and branches, we will also discover a varied and surprising fauna under the lens of Laurent Ballesta's camera. Among the most astonishing inhabitants of the forest, there is anglerfish... This ace of camouflage adopts the color of his environment. Even better, the appendages surrounding her large, flattened body look like algae.

DIVE AT 200 METERS, AN UNKNOWN EL DORADO

The last stage of the adventure takes place off Nice, on the «Tombant des américains». This is a unique site in the French Mediterranean: an underwater extension of the steep cliffs of the Nice hinterland, it plunges vertically towards the abyss, offering a dangerous and fascinating diving spot...

On this exceptional site, 2 simultaneous dives are organized. The 4 adventurers locked in their capsule, and the 2 divers from the surface: Roberto Rinaldi, and Florian Holon. The latter will descend to 100 meters and join Laurent and his companions underwater. But they won't be able to spend much time at this depth... As soon as they get there, we'll have to start going up.

Laurent, Yanick, Antonin and Thibault will start their dive at 100 meters, stay there for a while, then try to dive down to 200 meters.

We follow each step of this high-risk dive.

At 100 meters, the reunion between the divers is intense and warm. A real breath of fresh air in the deepest depths for Laurent and his comrades, locked up in their station without any real contact with other members of their team. Then the 6 divers gathered together leave in the same direction by touching the drop-off... Their exploration begins along a fracture line. On the drop-off, fixed invertebrates have colonized most of the space. They are the only ones who can stay upright in this way... In front of this immense wall, divers discover a real festival of shapes and colours...

After a few minutes of strolling, Roberto waves to Yanick that it is time for him and Florian to go back up. Laurent, Yanick, Antonin and Thibault continue their exploration at 100 meters. Suddenly, Yanick hits his 3 companions on the shoulder and waves at them. All 3 answer in the affirmative, and together switch down. The second part of the dive begins: the 4 men begin their descent. The objective: to reach a depth of 200 metres....

We follow the divers in their fast descent. Suddenly, they stop and look at their pressure gauges. -200 meters. They exchange a few signs, check that everyone is fine, and then begin their observations. Images of life fixed on the wall, illuminated by the light of Thibault's projectors.

Certainly, robots and scientific submarines have been offering us samples and images of this distant world for decades. But this biodiversity only really becomes a common heritage if a few privileged people «get wet» to get close to it and make it known. It is through this effort,

this risky approach, this physical face-to-face approach between Man and biodiversity that these natural resources suddenly take on another value in our eyes.

After 20 minutes at 200 meters, the four divers make a very slow 2-hour ascent to the turret. The profile of this dive is absolutely unprecedented: divers usually immerse themselves in the surface to make incursions at 100m. Here, they immerse themselves at 100m to make an incursion at 200... A real dive in diving...

We leave the divers in the middle of the landing to find them in the lift turret. They are calm, tired, and focused on their feelings. They should remain alert for symptoms of decompression sickness. On the surface, Jean-Marc and Théo are listening. At the slightest worrying signal they will only have one remedy to offer divers: to increase the pressure in the station to re-compress them. And hopefully that's enough.... It would sign off the mission immediately and trigger a very slow decompression protocol of about a week.

DESATURATION

After 23 days of adventure, it is now time to take the return trip. The convoy returned to its home port, Marseille.

The barge docked, and there was a lot of excitement on board. The crew carefully store the equipment and then take it out on the docks. The expedition to the deep depths of the Mediterranean is coming to an end, and all the equipment is back in the premises of the Institut National de la Plongée Professionnelle...

The barge is emptying of all its inhabitants... Or almost... Laurent, Yanick, Thibault and Antonin are still locked in their big yellow box... It's time for decompression. 1 hour per metre of depth... That is more than 4 days to remain locked in 5 square metres...

Faithful to the position, Theo watches over the divers from the control room. Over the hours, it will gradually change the pressure and composition of the atmosphere inside the cabin, to simulate a slow rise to the surface.

In their steel cage, the volunteer prisoners kill time as they can... The images follow one another to suggest the time that passes: physical exercises, chess games, cognitive tests, meals, reading, photo retouching, meals, sleep...

EPILOGUE

A time lapse of the barge with sunrises and sunsets once again evokes the succession of hours. Then an impressive compressor noise breaks the silence, and the door of the life station opens loudly. The 4 divers come out with their heads out, blinded by the sunlight.

The time for liberation has finally come... And a surprise welcoming committee awaits the adventurers from the deepest depths. The large family of Marseille divers is here in full. Laurent's relatives, Yanick, Thibault and Antonin also made the trip to celebrate their return to earth...

Images of the reunion. The emotion is great, some adventurers escape a few tears, especially Laurent who finds his partner and his baby born just before the expedition's departure.

By a vertical aerial view, we gain altitude above the barge. We leave the group to fly over the creeks and the Mediterranean coast. We then find a sequence shot similar to the one that opened the film, but backwards:

from the creeks we gently move away from the coasts, then dive underwater. The camera descends vertically towards the abyss. The light gradually decreases until it is almost completely dark. Then underwater lighting reveals sumptuous coralligenous massifs... A panorama of the most beautiful sites discovered throughout the expedition.

For the first time ever, divers experimented with a new way to explore the deep sea. Thanks to their pressurized steel box, they went where no one has ever stayed more than a few minutes...

A stone's throw from the beaches of the French Riviera, they have revealed to the world immersed gardens of unsuspected beauty... High biodiversity sites, which undoubtedly play an essential role in the balance of underwater fauna.

Hidden in the shadows of the depths, these unknown territories can finally begin to be studied... And are still far from having revealed all their secrets.

- THE END -

CV DIRECTOR
Gil Kébaïli

SELECTIVE FILMOGRAPHY

700 sharks, directed by Luc Marescot in collaboration with Gil Kébaïli, 90min, ARTE 2018.

The secret life of the atolls of Polynesia, co-directed with Manuel Lefèvre, 52min, ARTE 2018.

Madagascar, expedition in Makay territory, co-directed vwith Evrard Wendenbaum, 52min, ARTE 2018.

Greenland, the Whispering of Ice, 52min, ARTE 2018.

Tibet, the Way of the Winds, directed by Hamid Sardar in collaboration with Gil Kébaïli, 52min, France 5 2018.

Antarctica directed by Jérome Bouvier in collaboration with Gil Kébaïli. 90min, ARTE 2017.

Vines and men, 52min, ARTE 2017.

A new pact with the forest, 43min, ARTE 2017

The Grouper Mystery, 90min, ARTE 2015

The true history of the Medusa, co-directed with Herlé Jouon, 90min, ARTE 2015

The Coelacanth, a plunge towards our origins, 90min, ARTE 2013

Polynesia in the heart , 110min, Thalassa France 3 2013

Coastal France: 24x8min / 4x52min / 11x12min, Thalassa France 3 and France 5 2012
The desert of the first man, 90min, Ushuaïa Nature TF1 2012

We stepped on Iceland, 90min, Ushuaïa Nature TF1 déc 2009

The red island with a green heart, collection ARTE 2009

The great explorers, 5x13min, Thalassa France 3 2008.

Marquises, the teeth of Akaui, 52min, Seasons 2008

Laos-Cambodia, The Lost City, 90min, Ushuaia Nature, TF1 2007

The unicorn's landmark, 90 min, Ushuaia Nature, TF1 2005

Alaska, The Last Frontier, 90min, Ushuaia Nature, TF1 2003

Ethiopia, The disasters that threaten us, 90min, M6 2002.

Polynesia, The constellation of islands, 90min, Ushuaia Nature, TF1 2002

British Columbia, The Spirit of the Forest, 90min, Ushuaia Nature, TF1 2000.

Kamchatka, From Origins to Lost Worlds, 90min, Ushuaia Nature, TF1 1999.

India «Ganga», 2x8min, TF1, 1998

Namibia-Botswana «Water and sands», 90min, Ushuaia Nature, TF1 1997.

CV CO-WRITER
Laurent Ballesta

Laurent Ballesta is a biologist and naturalist photographer. Being a professional diver, he was a precursor in using since 1999 a new kind of diving equipment, an electronically controlled mixing closed circuit rebreather, which offers revolutionary perspectives in underwater exploration as the dives are much deeper, last much longer and the diver is more silent and discreet.
From 2002 to 2015 he conducted 26 missions of deep diving for naturalistic explorations in the west Mediterranean Sea.
In 2006 and 2007 he accomplished the first deep dives for naturalistic observations in the channels of Land of Fire, Patagonia.
In 2008, he took the deepest image in the world ever photographed by a diver at - 625 ft, by the French Riviera.
That same year, he led a 30 days mission to explore and photograph the deep ecosystems of Lifou island, New Caledonia.
With this knowledge in deep diving, he led in May 2009, a confidential expedition to South Africa to confirm that diving with Gombessa (the local name of the coelacanth fish) was possible and brought back the very first pictures of the living fossile fish taken by a diver, down at - 395 ft.
This mission led to his first « GOMBESSA Expedition », 4 years later, to conduct the first scientific protocols on a living coelacanth specimen, at - 120 m/395 ft.
In January 2014, Laurent published his book Gombessa, meeting with the coelacanth, still the only photographic collection about the Coelacanth.

After the first expedition in Fakarava in 2014, he returned every year to prepare for Gombessa IV, and develop accurate and unique science protocols that were used in 2017.
Laurent has published 13 photography books and has highly contributed in directing 10 documentary films for french and international TV.
He has published portfolios in major magazines of French and foreign press, including 3 main stories in the National Geographic USA : the coelacanth, the deep ecosystems of Antartica and the complex event of the grouper's aggregation in Fakarava coupled with the hunts of the grey sharks at night.
Laurent has led numerous exploration missions and 4 GOMBESSA Expeditions. Every new mission is in the lineage of the previous ones, and strengthens the three pillars of all Gombessa expeditions: a scientific mystery, a diving challenge and the promise of unprecedented animal images.

PUBLICATIONS

2005 - *Planète Mers*, ed. Michel Lafon
2006 - *Planet Ocean*, ed. National Geographic
2007 - *Plongées sans bulles*, ed. SVI Publicep
2008 - *Secrets de Méditerranée*, ed. Andromède Collection
2010 - *Secrets de Méditerranée*, ed. Andromède Collection
2012 - *Odyssée dans les eaux d'ici*, ed. Andromède
2013 - *Une vie dans le port*, ed. Andromède
2014 - *Gombessa, rencontre avec le coelacanthe*, ed. Andromède Collection
2015 - *Gombessa, meeting with the coelacanth*, co-ed. Andromède Collection/OceanPlanet 2
2016 - *Adélie, Terre & Mer*, co-ed Paulsen
2018 - *700 Requins dans la nuit*, ed. Andromède

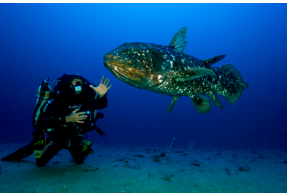
FILMOGRAPHY

2004 - Le 7ème ciel des requins gris
2007 - Dans les profondeurs de la Baie des Anges
2008 - Au royaume du Nautile
2010 - Ushuaia, l'aventure du coelacanthe dans le canal du Mozambique
2011 - Les larmes du crocodile
2013 - Le coelacanthe, plongée vers nos origines
2015 - Le mystère mérou
2017 - Antarctica, Sur les traces de l'Empereur
2018 - 700 Requins dans la nuit

AWARDS AND HONOURS

2000 - *Plongeur d'Or*, Festival Mondial de l'Image Sous-Marine, Antibes, France
2002 - *Plongeur d'Or*, Festival Mondial de l'Image Sous-Marine, Antibes, France
2004 - *Plongeur d'Or*, Festival Mondial de l'Image Sous-Marine, Antibes, France
2013 - *Hans Hass Award* « en reconnaissance de la contribution apportée au savoir de nos océans »
2014 - Membre de l' Ocean Artist Society, USA
2016 - *Docteur « Honoris Causa » de l'Université de Liège,* Belgique
2017 - *Tridente d'Oro*, Accademia Internazionale di Scienze e Tecniche Subacquee, Italie
2017 - *Diver of the Year*, Beneath the Sea Diveshow, USA
2017 - *Wildlife Photographer of the Year*, category Earth's environnement, National Museum of London
2017 - *Chevalier de l'Ordre National du Mérite*

LES GENS BIEN PRODUCTIONS



LES GENS BIEN PRODUCTIONS develops and produces documentary content for television and digital in the fields of discovery, science and adventure.
Specializing in scientific and sporting expeditions, we support the projects of modern-day adventurers eager to push their own limits as much as those of nature, such as the diver-photographer Laurent Ballesta, the naturalist Evrard Wendenbaum or the ethnographer Hamid Sardar.
We back their passion and commitment because we feel moved to provide information on the need to preserve the biodiversity of our planet, and to highlight cultures threatened with extinction.
Centered around Vivien Lemaignan and Gil Kébaïli, Les Gens bien Produc- tions feeds on this spirit of adventure, and places boldness, creativity and ethics at the heart of our practice. With a dynamic and human-scale team, we have the full set of skills that enables us to integrate the entire production line of our films, from development to post-production.

Among our productions:

700 Sharks, directed by Luc Marescot, written by Laurent Ballesta, Gil Kébaïli and Luc Marescot, 90', ARTE, coproduction Le Cinquième Rêve, Andromède, CNRS Images

Groenland: les Murmures de la glace, directed by Gil Kébaïli, written by Evrard Wendenbaum, 52', ARTE

Madagascar, expedition in Makay territory directed by Gil Kébaïli, written by Evrard Wendenbaum, 52', ARTE

Tibet, The Ways of Winds, directed by Hamid Sardar, 52', France 5, coproduction DCMP

The Feast of Sharks, directed byGil Kébaïli, 26', TF1, coproduction Andromède

The heirs of Commander Cousteau, directed by Gil Kébaïli, 26', France 3, coproduction Andromède

The Grouper Mystery, directed by Gil Kébaïli, written by Laurent Ballesta and Gil Kébaïli, 52', ARTE, coproduction Les Films d'Ici, Andromède Océanologie

The Coelacanth, a plunge towards our origins, directed by Gil Kébaïli, written by Laurent Ballesta and Gil Kébaïli, 90', ARTE, coproduction Les Films d'Ici, Andromède Océanologie, CNRS Images

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