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Interview

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LORENZO BRAMANTI

Lorenzo Bramanti

Underwater scientist

«Whispers From the Deep: Unveiling the Secrets of the Animal Forests»

Lorenzo Bramanti says, «I got on a boat before I could walk.» Lorenzo is a scientist with a passion for the sea and its mysteries. One of the world's most respected scientists, he is an expert on corals and the workings of the underwater world, as well as the scientific co-director of the DEEPLIFE project with Under the Pole (a project supported by the Decade of Ocean Sustainability, 2021-2030 programme) and scientific leader of a project in cooperation with UNESCO and the 1 Ocean Foundation. He is also the author of approximately 100 articles in international scientific journals, a lecturer in several languages around the world and frequently present on TV channel both in France (including ARTE.tv) and Italy ; but, above all, he is an explorer and underwater scientist.

–Why were you attracted to water and not land?

–I was born in a small Mediterranean village. My great-grandfather was a sailor, my grandfather was a diver in the military special forces, my father, uncle and aunt were involved in underwater sports, freediving and diving. In summer we were always at the sea, I was used to seeing everyone disappear beneath the surface of the water.... What was I to do? It wasn't a decision. If I wanted to stay with my family, I had to go into the water... such a poor kid!

But jokes aside - I feel most comfortable underwater. It gives me peace of mind but at the same time intellectual stimulation, a willingness to see what's out there but without the stress and pressure. My head works better when it's underwater.

–What are the most important and interesting projects for you nowadays?

–I'm passionate about and trying to follow many lines of research. But I can confidently say, at the moment, that developing the concept of the animal forest is something I'm fascinated with. It's a new concept in ecology and conservation: corals, gorgonians, black corals... they're all tree-like organisms whose three-dimensional shapes give complexity to the substrate. At high enough densities, they form veritable forests that modify the environment under their canopies, providing shelter and food for hundreds of species. However, corals are animals - not plants! Nothing like this exists on land! We have to come up with new definitions, find new rules and give them a new name: marine animal forests. It sounds like something out of a fantasy book, but instead we see them every day.

–You work with Under the Pole and UNESCO. What are you latest discoveries ?

–With Under the Pole, I'm studying the mesophotic marine animal forests. We're discovering a lot about how underwater forests work, finding all the fascinating similarities with their terrestrial counterparts, but also the many differences. What I'd like to do on this expedition is to change the

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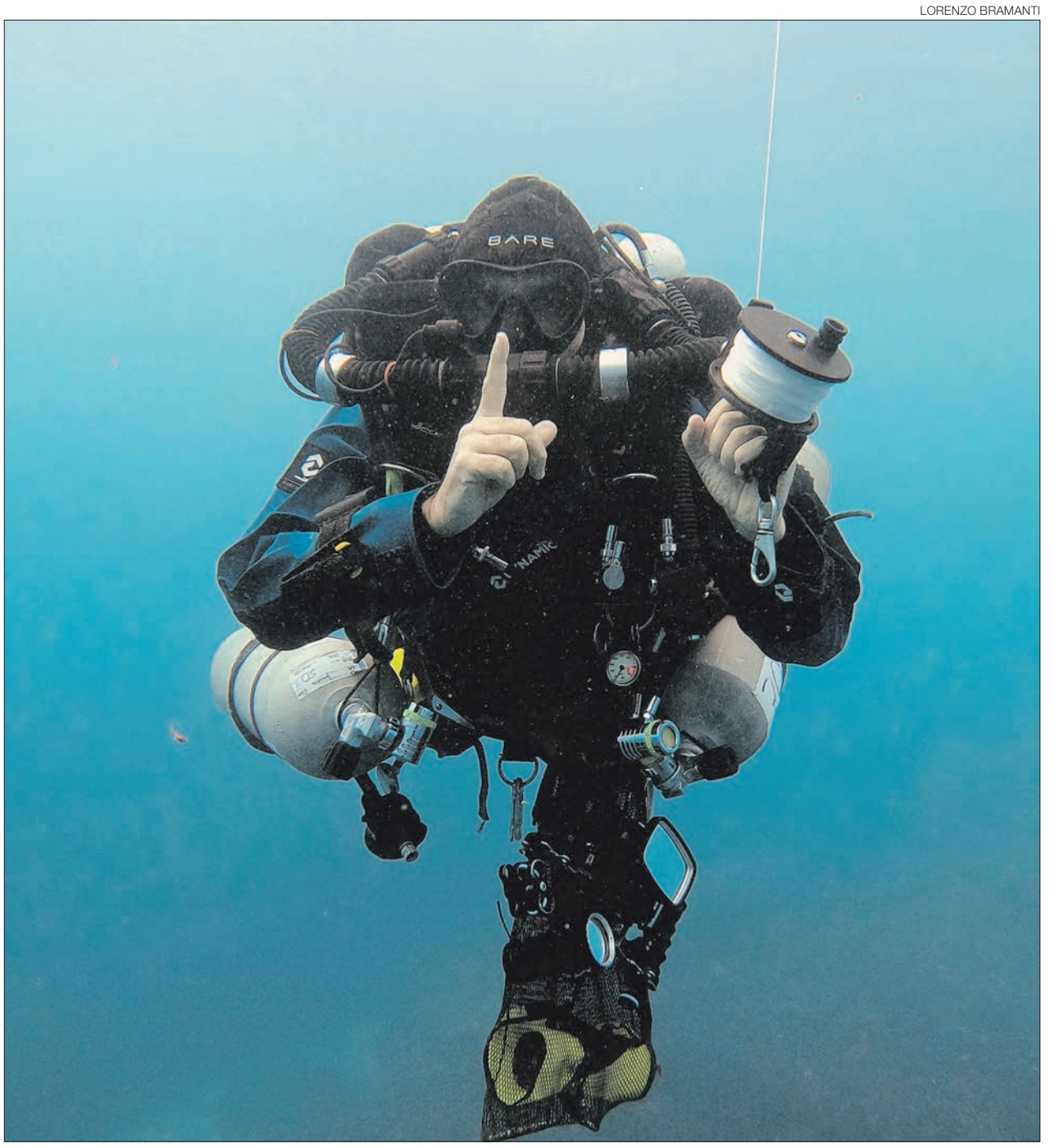

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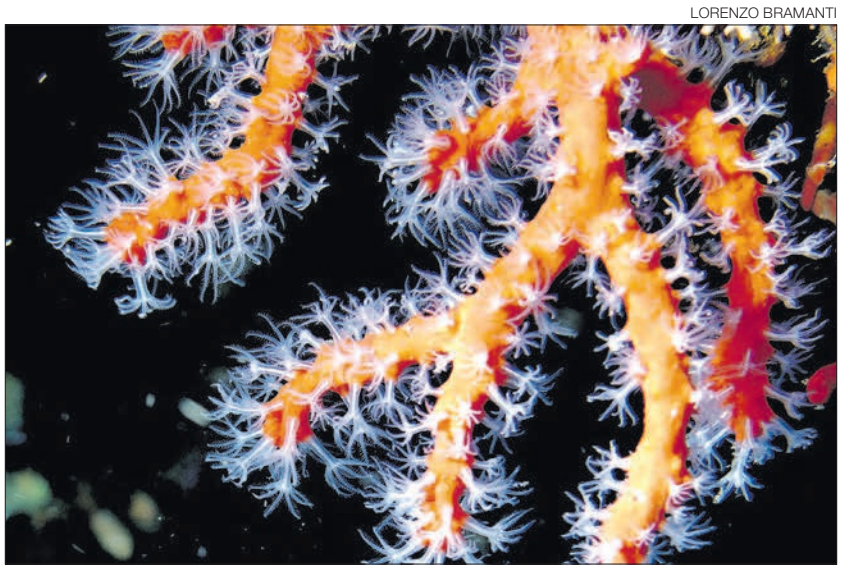

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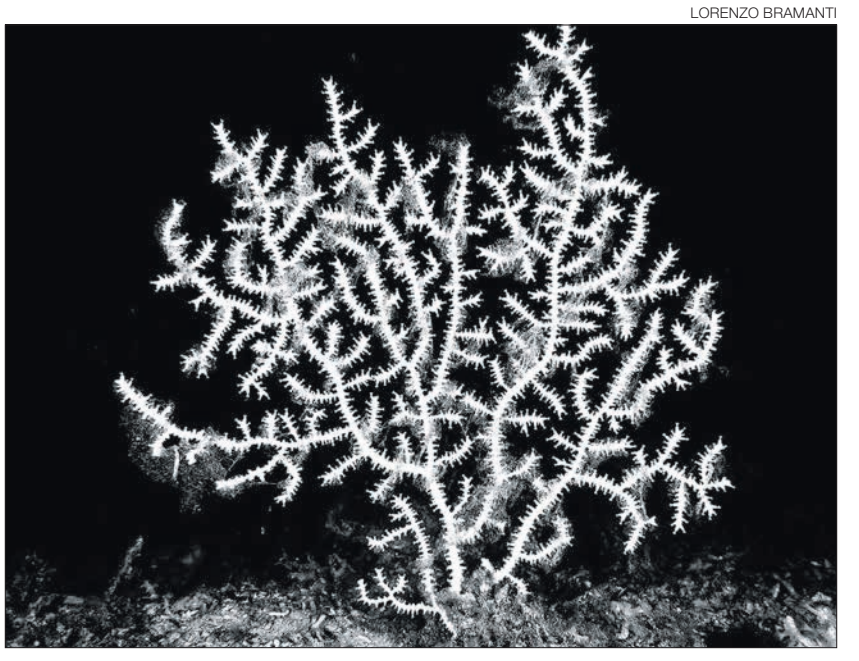

►► The part of the seafloor, between 60 and 200 metres deep, is relatively little explored.

concept of conservation - to go from conserving a species to conserving the function of that species in the ecosystem.

What's important to me in protecting the gorgonians? If there are only one or a few left, we may have protected the species, but what about the function it fulfils in the ecosystem? What about the microclimate they generate and the shelter they provide? No one thinks of protecting a chestnut tree or a pine. We protect the forest, because it has a function in the ecosystem. In the sea, we haven't reached that point yet. So, we need to look at things differently and see forests where others see corals.

–One of Under the Pole's three missions is an innovative approach to studying the underwater world. Could you tell us about these innovations (the Capsule programme)?

–When I was young, I was fascinated by ethology. I admired the ethologists in documentaries who spent days and weeks in nature, observing animals and taking notes to understand their behaviour. I wanted to be an ethologist, but I also wanted to be a marine biologist... and why not a marine ethologist? I realised that there is no such thing as a marine ethologist. There are those who study the behaviour of cetaceans, but almost never in the water; always from a boat. There are those who study the behaviour of fish... especially in aquariums.

> «The discoveries are made not when you find something new, but when you look at it with different eyes»

After all, you can't spend your days underwater... unfortunately. Now, we dive underwater with repeaters, breathing TRIMIX gas mixtures to stay there longer, but we stay there for three hours, four hours...five hours... and then we have to go back. With the capsule, it's different. You can stay underwater for days, constantly watching what's going on outside, taking notes, but underwater. With the advent of the capsule, the profession of underwater ethologist was born.

–You are the author of about 100 scientific articles. What worries you most today?

–Scientific articles are a curious thing. They are mostly written for experts; very few people in the world read them. To be published, scientific articles have to be vetted by other scientists. They make sure that what is published is rigorously provable, reproducible and form pieces of knowledge that other scientists can build on. It seems that it was Newton who said that he was able to make his discoveries because he was able to "climb the shoulders of giants" to see farther.

The scientists who have published before us are the giants we rely on to keep going. Once a discovery is made, validated and published in the form of a scientific article, it becomes available to everyone and can be used as a basis for making other discoveries.

But the question was different, wasn't it? I'm a marine ecologist; a coral specialist. I study functional ecology, conservation and restoration of coral systems, tropical, temperate, shallow water and deep water. I adore gorgonians, have a passion for Mediterranean red corals, and am obsessed with the mesophotic zone known as the «twilight zone» due to the drastic reduction in solar radiation. This part of the seafloor, between 60 and 200 metres deep, is relatively little explored and irresistibly draws me in.

–About 90% of our oceans remain unexplored. What kind of new discoveries could humanity make?

–I am convinced that the greatest scientific discoveries are made not when you find something new, but when you look at something with different eyes. To discover something, you have to ask new questions. It's not enough to go around the world, looking for something no one has ever seen. It's true, yes, we know very little about the ocean floor. But we also know very little about what we see every day. Even when the deepest parts of the seafloor are reached, mapped and described, there will still be an infinite number of things yet to be discovered and understood. And all these things and phenomena are waiting for minds that know how to ask the right questions.≡