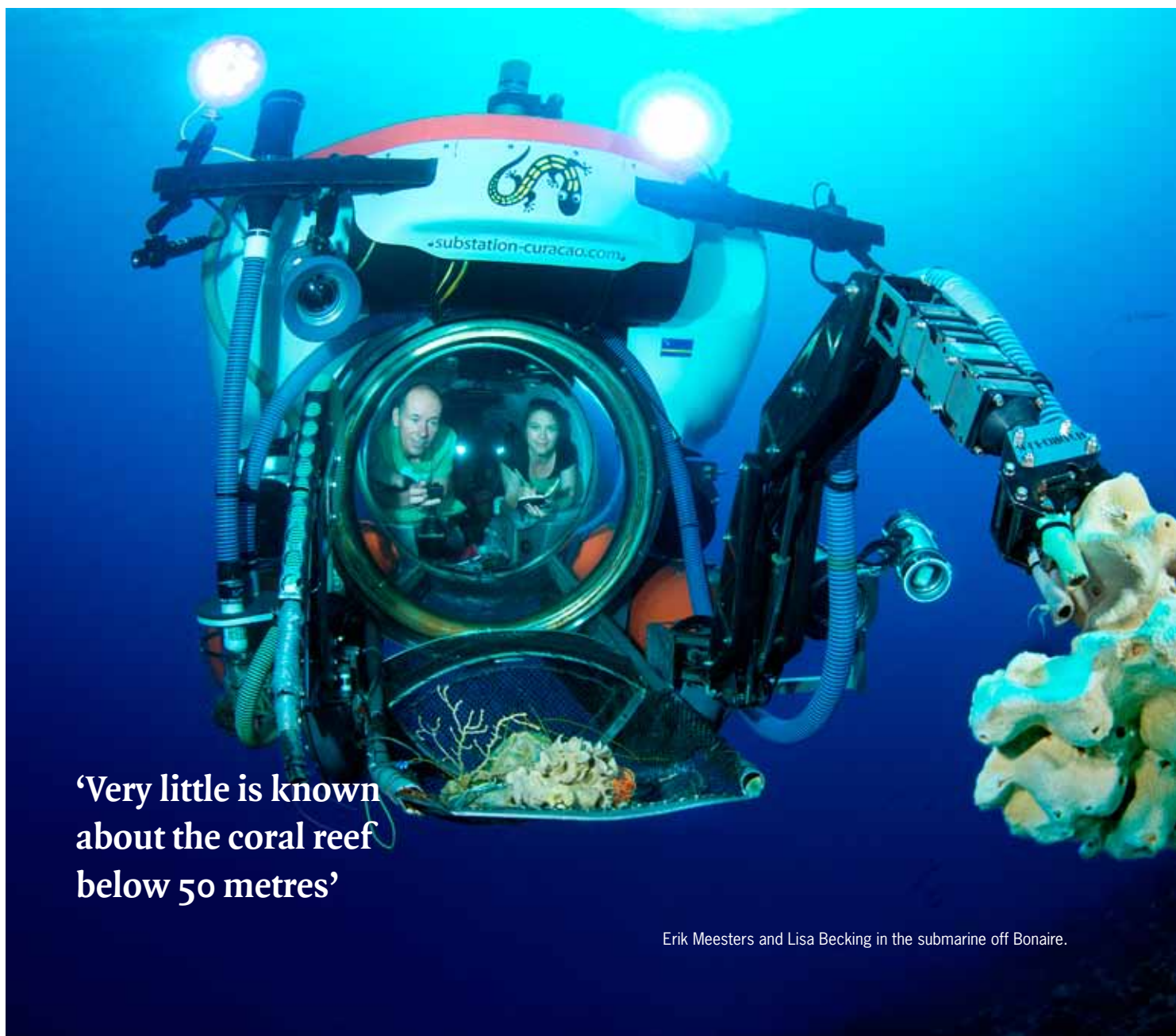


Down to uncharted depths



**‘Very little is known
about the coral reef
below 50 metres’**

Erik Meesters and Lisa Becking in the submarine off Bonaire.

An underwater expedition to more than 300 metres deep in unexplored waters around the island of Bonaire produced information about biodiversity in the Dutch Caribbean: a new shrimp, unknown sponges and a strange carpet of cyanobacteria. Not a comfortable experience though. ‘You lie side by side on your stomachs for six hours, staring out.’

TEXT RIK NIJLAND PHOTOGRAPHY BARRY BROWN

Actually, Lisa Becking and Erik Meesters are still exploring the ocean around Bonaire, only now they are doing it on their computer screens at IMARES Wageningen UR. ‘Just look at all these little worms. There is a sponge and that transparent thing is a sea squirt’, says Meesters, pointing at his laptop. ‘But what is that over there? Is it a brittle star? What do you think?’

‘We are continuously noticing new details on the photos and videos,’ explains Becking. ‘In the sub you don’t always know exactly what to look out for.’ Last spring the tropical marine ecologists of IMARES were given a unique opportunity to explore the coral reef at Bonaire by submarine, going deeper than they normally go as experienced divers.

The idea of these excursions to more than 300 metres under the sea came from the Dutch ministry of Economic Affairs, which is responsible for Dutch nature areas, including those off Bonaire, St Eustatius and Saba. ‘The Netherlands has signed treaties on the conservation of biodiversity. One of the consequences of that is that you should find out what kinds of organisms live there. Very little is known about the deep reef, below 50 metres,’ says Meesters. The first explorations were possible because one of the world’s few research submarines is stationed on Curacao. Because the owner, businessman Adriaan ‘Dutch’ Schrier, is crazy about underwater life, he financed the transfer of the vessel to Bonaire, and the ministry of Economic Affairs funded the diving.

DRIPPING

The researchers were not scared in the submarine but Becking does have vivid memories of the discomforts of life on board. In shallow waters it was stiflingly hot, and the deeper it went the colder it became, with condensation starting to drip from the steel walls. ‘And you lie side by side on your stomachs for six hours, staring through the porthole. It’s tough. You can’t just

nip out for a pee either.’ There was very little room for manoeuvre, adds Meesters. ‘It is a mini-sub: there were the two of us, the pilot, the technician and a passenger, all on a surface area not much bigger than this desk.’

The deeper they went down the reef, the thinner the coral became, for lack of light. They came to a sandy patch broken up by bits of old reef from periods when the sea level was much lower. These formed a kind of oasis full of life. There was a surprise to come though. ‘On all three of the dives we ran into a zone at a depth of 50 to 100 metres where the seabed is covered with a layer of cyanobacteria. We are familiar with these from the coral reef, where they are a sign of disturbance, but this might be their proper place in the system,’ says Meesters.

The submarine is equipped with two strong lamps and the equipment needed for taking samples: a gripper, a net to collect the booty in, a chisel to work stubborn sponges loose and two tubes – one for giving a fish a small dose of poison and another for vacuuming up the drugged victim.

The researchers brought about 80 finds to the surface, including about 50 sponges and a shrimp that clung for dear life to its ‘own’ sponge. A new species, revealed research at Naturalis natural history museum in Leiden, where most of the identification is done. Science has probably gained a couple of new species of sponge from the exercise, not to mention a possible stream of new micro-organisms that live symbiotically on the sponges. These results provide no more than a first impression of the biodiversity in these waters, the researchers stress. ‘We would love, for instance, to take a look to the north of the island as well. The slope is steeper there and probably even more interesting, but we need a sponsor before we can investigate that. ■

Info: www.wageningenur.nl/dutchantilles

