present the first wave of product due to their relative simplicity and relatively low cost. Even so it will be a while before the technology is generally available on a broad scale. Several rebreather start-ups reportedly plan to offer systems within the year; Cis-Lunar Labs, Prism Life Support Systems and Oceanic. Expect to see them offered at the 95tek. Conference where hands-on training will be available. Training will be an important component of purchase, and a typical training course is likely to run about 40-60 hours.

Finally, forum participants expressed the desire to form an association for advanced diving technologies, code named, "Deja Vu". After all, there is more to come. Confessed, Bishop Museum's Richard Pyle, "I always believed that open circuit was just a stop gap until I got my rebreather. However, on the way to the forum I spent a weekend with Phil Nuytten (inventor of the Newtsuit). Now I am wondering whether rebreathers aren't just another stop gap along the way." Something to think about.

For more information about the forum or the association to be formed, contact

aquaCorps Journal, PO Box 4243, Key West, Florida 33041, USA.
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aquaCorps will announce when a transcript of the Rebreather Forum is available for sale.

THE ENDLESS DEATHS IN COZUMEL IS THIS AN ANSWER TO THE MYSTERY ?

UNDERCURRENT Editor's introduction

In February, two divers disappeared into the deep in Cozumel. We wrote about that incident in May and, in the last issue, reported another death in Cozumel. Cozumel has the highest death rate in the Caribbean. Why? Subscriber Eric Glanz of Steamboat Springs, Colorado, wrote to tell us about his unusual experience on Santa Rosa Wall in Cozumel. Those who visit there should give heed.

*****

I have been diving for five years, having fewer than 200 dives. My dive companion is a new diver, with only 10 dives prior to our mid-April trip to Cozumel. We stayed at the Club Cozumel Caribe and the dives were quite crowded. Due to the large crowd, many times we were unable to get on the morning dives and instead went out in the afternoon. We always dived well within our tables, even though I also had my computer as a back-up.

One afternoon, the trip was planned to Palancar Gardens but because our boat travelled so slowly the divemaster suggested we stop at Santa Rosa Wall. We were to drop to 24 m (80 ft) and drift along the wall for 20 minutes. At 4.5 m (15 ft), we were to do a two minute decompression stop before surfacing and being picked up by the boat that was following our bubbles.

As we sank to 24 m (80 ft), we began to drift at a comfortable, customary Cozumel drift speed. Fifteen minutes into our dive, I noticed a radical change in the appearance of the wall in front of me. I could see sand rushing down the wall and all of the soft sponges and gorgonians bent over at a steep angle as they were buffered by the propelling water and sand. The south to north drift carried us into this chaos and I quickly lost sight of my dive partner who was drifting only five feet to my side. The divemaster who was in front of me also became unobservable as my head was surrounded by bubbles, making my instruments nearly impossible to read. I assumed the bubbles were my dive partner's, as I was immediately over her, but in actuality, the bubbles were my own, being forced down upon me due to the strong downward current! Turbidity also obscured my vision.

Mild panic set in as I tried to read my gauges and find my dive partner, causing even more bubbles to obscure my vision. Then, after what seemed to be an eternity, the downward ride ended at 37.5 m (125 ft). We were then propelled quickly upwards, how quickly I cannot say, but too quickly, ultimately being pushed to the surface where we joined our dive master. Remarkably, all three of us were still together, yet separated from the rest of the group who surfaced at least 75 m (yards) away.

We had taken quite a ride. The divemaster, who himself was mildly panicked, returned to the surface with 500 psi as did my dive partner and I. I still do not understand what happened, but it was explained that due to the time of year, the ocean was changing temperature and generating underwater waves and extreme currents. As we returned on the dive boat, we observed, in an otherwise choppy sea, large areas of placid water, perhaps 10-30 m (30-100 ft) in diameter, like glass, surrounded by whitecap rapids. Sometimes in the middle of this calmness we could see a funnel directed downwards like a tornado.

The Cozumel drift must have carried us through the down current to a point where we were propelled upwards. It all happened so quickly it is difficult to say. None of us had any nitrogen problems however.

Actually we should never have dived since the telltale signs of the undertow currents were observable to an experienced diver from the surface! We had entered the water without any briefing or warning of what to do if we experienced such a situation. In discussing the experience with other divers at the hotel. I learned that the

undercurrents could be so powerful that even inflating your BC vest will not raise you to the surface. You must drop your weight belt. Hopefully, then with an inflated BC one could rise to the surface, perhaps not too quickly if you spread eagle to slow the ascent. Any advice you can give to your subscribers about this type of situation. which apparently is not all that uncommon, would be helpful. Perhaps this phenomenon occurs during very limited periods of time during a year, but if it occurs again, we will be better prepared to deal with it.

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The address of Undercurrent is 3020 Bridgewater Suite447, Sausalito, California 94965, U.S.A.

MORE ABOUT COZUMEL'S HIDDEN DOWNWELLING

Dear Ben

I read the letter in the last issue from Eric Glanz regarding an "unusual experience" in April on Santa Rosa Wall in Cozumel. He described a water flow inversion which forced his diving party downward due to strong current. This phenomenon may not be so unusual.

On January 4, while diving Cozumel's Chankanaab Reef, our group experienced a strong downward current that reversed the ascent with normal kicking. There were six divers and one divemaster, Jose "Portfiro" Barrera: the dive operation was Blue Bubble.

Our dive was our second after a 40 minute surface interval. The first dive was a 30 minute, maximum depth, 21 m (70 ft) drift dive on Punta Tunich. The normal current was in evidence, it was overcast with rain, there was some chop at the surface, and the water temperature was 27°C (80-81°F). In other words, a normal Cozumel dive. Upon arrival at the "jump-off" point at Chankanaab, no unusual surface conditions could be seen to predict events that would occur at the end of this shallow drift dive. At the conclusion of our dive, three of the six divers made an uneventful ascent to the surface to be picked up by the boat. However, the divemaster, one experienced diver (over 100 dives), and two newly certified divers (less than 10 dives) drifted into a down current that, while they kept kicking normally, pushed them from 15 m (50 ft) to 21 m (70 ft). The divers did not immediately realise they were "sinking" as their more buoyant bubbles were sinking at a slower rate than they were. This phenomenon was so subtle that the experienced diver thought his depth gauge was broken as it registered that he was going deeper, not ascending, and yet, all the external input said he should be ascending. The divemaster picked up the situation quickly and signalled to the experienced diver, then held the BCs of both new divers, and the group proceeded to kick strenuously to the surface. As slow ascent was being achieved, no air was put in the BCs and no weight belts were dropped. At about 3-4.5 m (10 to 15 ft), the down thrust was not strong but the divers were now moving in a clockwise circular motion. This circular motion was very evident to those on the pick up boat. Also, in an otherwise choppy sea, a glass-flat, circular area about 21 m (70 ft) across with what appeared to be a vortex (the exact description Eric Glanz reported) was observed.

The divemaster was very professional and calming. Though the three divers sucked a lot of air (none came back with over 500 psi and each started their ascent with over 1000 psi), nobody panicked through a vigorous but controlled ascent. Everyone was convinced that a possible tragedy was averted because of the capability of our divemaster in this completely unexpected phenomenon. Luck played a part because the group had "extra" air (second, shallow drift dive that was not taxing), but a competent divemaster made the difference.

The description of the down flow in April seems to describe a stronger current with a nearby up flow. Both events occurred in the grouping of dive locations south of St. Miguel (Chankanaab on the north to Santa Rosa on the south, Tormentos, Yocab, and Punta Tunich in the middle), but three months apart.

There is no doubt that this natural phenomenon is extremely dangerous. It is totally unexpected, breaks apart a diving group, separates buddies, can be powerful enough to force divers to non-recreational depths, and induces panic even in very experienced divers. The prevailing wisdom is that it is associated with the changes in tide and mixture of warm and cool water. If that is so, this is an event that can unexpectedly occur any time of the year.

Mark A. Anderson

Note to our readers *(by **Editor UNDERCURRENT**)*

Should you get caught in a downwelling or upwelling, stay calm, don't panic. Don't swim directly against it, since you probably won't win. Swim out of it at an angle so you don't fight it full force.

Ben Davison

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