

Profile of André Martel, a Malacologist

By Katelyn Low
University of British Columbia

When I first spoke to scientist André Martel, our conversation lasted so long that my laptop batteries died, my tape recorder ran out of space, and it was well over an hour before I got a word in edgewise. Our topic? You couldn't be blamed for guessing it was some super-thrilling science subject like cosmic collisions, erupting volcanoes or long lost secrets of the dinosaurs. But we actually talked about mussels. Specifically, the taxonomy of mussels.

It's a bit unexpected to think that taxonomy – the study of classifying species, long considered to be the one of the driest of the scientific fields – could be so utterly fascinating that a scientist would spend his whole life not only studying it, but absolutely loving studying it. But it only takes one conversation with mussel expert Martel to completely dispel the notion. Mussel facts flow effortlessly out of him: names of different species, their habitats, their lifestyles. If there is anything to know about mussel taxonomy, Martel knows it.

But what's most astonishing is Martel's tremendous passion. It exudes out of him – not in the wild and bubbly way of a child who can't contain his excitement – but rather in the understated and reined-in manner of a serious, seasoned intellectual who absolutely loves what he does. It's like he is privy to a fascinating world of which we are all unaware, and it is his privilege to discover and inform us of its wonders. In light of the perceived dullness of the subject, his passion is remarkable and highly curious.

The obvious, though blunt question is, why would a scientist such as Martel devote his life and considerable intellectual

pro prowess toward, well, *mussels*? And even more so, the taxonomy of mussels? The unassuming bivalves don't exactly cross the mind much, except maybe if you're a seafood chef or a sea otter. What is it about the molluscs that Martel finds so fascinating? This was the mystery I hoped to get to the bottom of, as Martel and I sat in a cozy, sun-drenched cafeteria at the Bamfield Marine Sciences Centre, a research and education facility located on southwestern Vancouver Island, where he conducts his research.

We began, of course, with some background on Martel's beginnings. Intriguingly, he was not actually a mussel fanatic from a young age – you know, the type of precocious kid who everyone just knows is destined for either great science or great weirdness – or at least, he made no mention of being one. He didn't catch the mussel-bug until a much later age. After finishing his Bachelors degree at the University of Québec at Chicoutimi, Martel took a job as a Nature Interpreter for Parks Canada at Forillon National Park in Gaspé, Québec. It was there that he first learned to scuba dive, an activity that would prove instrumental in awakening a passion for all things aquatic.

Martel was captivated by the ocean's inhabitants and their spectacular diversity. After experiencing the wonders of Canada's underwater world, there was no turning back. "That experience got me into grad studies very quickly," says Martel. He did his PhD research at Bamfield, in coordination with the University of Alberta's department of zoology. Currently, he is the malacologist (mollusc expert) for the Canadian Museum of Nature in Gatineau,

Québec and Ottawa, Ontario. In addition to continuing his own research on mussel taxonomy, he is responsible for a number of public workshops and education programs designed to increase awareness of malacology and biodiversity.

Considering the overwhelming array of animals Martel could have chosen to study, why did he select mussels over all other marine creatures? For one thing, he tells me, the relationship between mussels and their habitats is fascinating. Mussels can act as facilitator species, meaning that their presence in a habitat makes it possible for other species to live there, too. Martel gives the example of a mussel bed. The beds contain highly complex passages, full of winding tunnels and crannies between mussels that act as mini-habitats for other species. “One species of mussel can create homes for well over 200 other invertebrate species,” he says.

Martel is equally fascinated by red turf algae, which are complex, leafy marine plants that serve as homes for mussel youngsters just starting out in their lives. The algae, too, are chock-full of other sea creatures. “If you were to take a square of algae, ten by ten centimeters, and count all the species, from the tiniest single-celled protozoa to the snail and the mussel,” says Martel, “there would be hundreds.” The algae also create stable environments, and provide protection for smaller creatures during storms and powerful waves. “It’s like walking through a forest on a windy day,” says Martel. “Like trees, the algae provide protection for the small critters.”

Mussel ecology is a captivating subject for Martel. The ways mussels interact with one another and with other species is especially interesting to investigate; though the mussels are small in size, the conventional ecological relationships such as those experienced by predator and prey still occur. According to Martel, even

mussels as small as sand grains are hunted by predatory snails. “I find tiny drilled holes in their shells,” he says, referring to the remnants of a carnivorous snail’s attack.

As our conversation continues, it becomes increasingly apparent that the diversity of mussels is also an area of great interest for Martel. He loves identifying and studying the life histories and behaviors of different species of mussel. As it so happens, he is currently on the verge of identifying what he suspects is a new species, tentatively from the genus *Adula*. In the biological world new species are discovered every day, but this is an awe-inspiring experience for Martel. “I could literally spend the rest of my life studying this new species,” he says, without any hint of hyperbole. “Where this thing is from, what it does, where it lives, when they settle – it’s all fascinating to me.”

Fascinating as it may be for Martel, it is also considerably technical, proving there is much more to taxonomy than just routine naming and classifying. Martel is also responsible for collecting new mussels, as well as comprehensive lab work to confirm their identity. Using a variety of methods including DNA analysis and studying shell structures under high-powered microscopes, he compares the suspected *Adula* mussel to mussels of known identity. He also examines the mussels’ bodies for clues about their lifestyle and behavior.

This summer, Martel is not working alone. His fifteen-year-old son, Daniel, is helping him with some of the field and lab work. I ask him if his mussel passion hereditary, or at least contagious--Martel laughs and says, “I don’t know if he will even go into science.” At this point, Daniel seems to be more passionate about mountain biking than marine biology.

Family is important to Martel. His wife, Kathy, and his children often accompany

him to research locations. They are all here at Bamfield this summer. As we leave the cafeteria we pass his children playing outside, and I hear him casually utter a quick comment or two in French to them. After the lengthy mussel-laden dialogue, it's refreshing to hear a typical dad-esque remark from him.

Over the course of our conversation, I've learned that Martel doesn't view mussels simply as food, or as things stuck to rocks down in the ocean; instead he regards them almost as colleagues, fellow inhabitants of our planet that in that sense, are just like us. "When you begin investigating their lives, you realize it's not simple," he says. "It's complicated. It's fascinating. It's full of questions. It's like us humans. We have a life, we go to school, we do this, we do that, and *they have their own story, too.*" And really, I think that is what motivates André Martel, in a nutshell. Or perhaps, more appropriately, in a mussel shell.