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ASK DR. PAULY

What is so good about mussels and oysters?

It has become fashionable to consume mussels, oysters and other shellfish, but before I try to explain why this fashion might be a good thing, we must be clear about what these shellfish actually are.

Shellfish are animals that live in the sea, but are not fish — fish have no shells. But lobsters and shrimp are also called shellfish. And thus, to distinguish oysters, mussels, and similar animals from other shellfish we should call them bivalves, referring to the fact that their shells consist of two halves, which can close and protect the animal living within. Most bivalves do not move. Rather, they attach themselves to rocks or the ropes of bivalve farmers. Only scallops can jump, by quickly snapping their shells when they see a hungry starfish approaching, which they see with a dozen blue eyes, like six tiny Scandinavians in a row.

Bivalves feed by pumping water into their bodies and filtering out the matter suspended in the water surrounding them, mainly living and dead microscopic algae. In effect, they clean the water in which they live. Many of us will recall school experiments in which two or three oysters placed in an aquarium, whose waters had been blackened by China ink, will restore the tank to clean water in an hour or so (but I suggest that you don't eat the oysters afterward).

Because they can't move to escape from waters they do not like, bivalves will only thrive when the water around them is clean.

In Chesapeake Bay, where once-giant oyster reefs kept the water crystal clear, the reef was destroyed by overfishing. Now, oysters have had difficulty reestablishing themselves because the water is too polluted. Thus, bivalves require clean water, but they also contribute to clean water along our coasts.

Now, why should anything that is good to eat be mentioned in connection with cleaning water — or China ink?

Bivalves are among the few marine herbivores that humans eat in large amounts. Herbivores are animals that eat plants on land, like grass and leaves, or their marine equivalent, the microscopic algae which are known as phytoplankton. In the sea, however, most herbivorous animals — the flea-sized zooplankton — are much too small to be eaten by humans. To contribute to our seafood, zooplankton must first be consumed by small fish which we can eat, like sardine, or by big fish that eat the small fish which we can also eat.

Thus, in the sea, we usually consume the equivalent of lions, wolves, or other predators that feed on herbivores, or of animals that eat lions and wolves (like dragons). The only animals that we eat in great amounts from the sea that are equivalent to our herbivores on land — antelope, sheep and cattle — are mussels, oysters and other bivalves.

Now where does all the good stuff that we expect our seafood to provide — like Omega 3s, iodine and other micronutrients —

actually come from? Not from zooplankton, or from the fish that feed on zooplankton. The good stuff all comes from phytoplankton, from the microscopic algae that are the food of bivalves. Bivalves feed on the very plants that synthesize the good stuff we want in our seafood, and this is also the reason why they are so tasty, especially when served raw, smoked, or as part of a paella.

Because they do not need to be given costly animal feeds — as do farmed salmon — farm-raised oysters and mussels, like those grown on ropes hanging from floating rafts, are also quite inexpensive.

Thus, eating bivalves from farms will provide you with animal protein from animals that do not suffer existential angst and that do not mess up the environment, but rather clean it. And this package of good things will not cost you much. So go ahead and eat an oyster; and if you don't like them, eat mussels.



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