

# The Oyster Pea Crab

A mollusc's auspicious roommate

By Michelle Z. Donahue



Oyster pea crabs found inside shells

I came to Baltimore in search of a lucky oyster. Alas, not the kind with a pearl.

After inquiring with my server at Ryleigh's Oyster, he returned a few moments later with a lopsided grin, carrying a small dish. Wobbling in the center of the plate was a perfectly round and glistening crab, no larger than a cats-eye marble.

Translucent, it glowed with a streak of coral-colored roe. After a few frozen moments, the crab began to scissor its claws weakly, the only sign it was even alive. Supposedly good luck to find, they are a strange little novelty to eat.

I cringed. Signs posted around Ryleigh's dim interior remind visitors of Jonathan Swift's sage observation that the first man who ate an oyster was unusually plucky.

How could eating one tiny crab possibly be weirder than slurping down an oyster?

Well, the fact that the crab is there at all may be a bit odd to anyone who encounters one.

## Enter the pea crab

After finding one years ago, I learned it was an oyster pea crab, *Zaops ostreum* (formerly *Pinnotheres ostreum*). There are many types of pea crabs around the world,

living inside bivalves of all types: clams, mussels and, of course, oysters.

If one does chance to find a crab, it's almost always female. She enters when she's still very small, molts several times into her mature form, and sits back to wait for a conjugal visit from a passing male. She enjoys the oyster's protection, and shares the filtered particles the oyster consumes.

*Zaops* prefers Eastern oysters (*Crassostrea virginica*), and occurs more

frequently in areas of higher salinity — in Maryland, this is closer to the mouth of the Chesapeake Bay. Higher up in the Bay, crabs are quite rare: one in 10,000 wild-caught Chesapeake oysters might harbor a pea crab.

Johnny Hux, a native of Essex and the server who brought me the crab at Ryleigh's Oyster, has been shucking oysters for more than 20 years. He is so deft that he barely glances at the shells he's knifing open as he talks.

He speaks of the crabs as if an oyster without one is the oddity, rather than the reverse, though the majority he sees are from Blue Point oysters from the Long Island Sound. It's not a trivial number — he estimates one in three oysters from a box of Blue Points contains a crab, a figure backed up by several scientific surveys.

"Sometimes I leave them in, but mostly I take them out," Hux says. "A lot of people coming in are novice oyster eaters and it doesn't sit too well with them to find a crab in their oyster. They don't know that it's not a parasite."

The pea crab and oyster live in a type of symbiosis called *commensalism*, from the Latin for a *companion at table*. The crab directly benefits, and while the oyster doesn't, it isn't directly harmed, either. It's like being assailed by a dog's prayerful eyes at supper but then allowing it to have some scraps after.

However, because the crab sits on its host's gills, it can cause damage and hamper the oyster's growth: in a study comparing the meat weight of oysters with crabs to oysters without, oysters that contained crabs did weigh slightly less overall.

## The luck of the crab

In Casey Todd's experience, crabs are usually found in larger oysters, and it might be one reason the crabs are considered lucky. His family has been selling seafood since the 1800s, and opened MeTompkin Bay Oyster Company in Crisfield in 1945.

Today, Todd employs 25 oyster shuckers; the experienced workers see so many crabs they don't bat an eye when they find one. Plus, pea crabs tend to show up in large oysters — and fat oysters mean more money.



Two crabs in a dish

"When you're shucking oysters, you get paid by the piece," Todd says. "Crabs seem to thrive in healthy oysters, which are a good day's work since they have lots of meat. It's a good payday that day."

Dr. Joel Fodrie, an expert in estuarine ecosystems at the Institute of Marine Sciences at the University of North Carolina in Morehead City, says it's likely just a function of biology. "You probably find more in large oysters simply because there has been more time for the crab to find and enter the oyster," he said.

Oyster pea crabs also have a secret weapon that gives them a boost against fish predation: an on-board chemical defense system. Dr. Mark Luckenbach, a researcher and associate dean at the Virginia Institute of Marine Science at the College of William and Mary, stumbled across this feature in an unrelated experiment on fish.

While feeding his test fish, Luckenbach noticed they gobbled up all the blue crabs he fed them, but spit any pea crabs right back out — alive and unhurt. Afterward, the fish sulked, as if they'd tasted something atrocious.

Electron microscope images revealed a mucus-like substance on the pea crab's exterior, and though the nature of the chemical is still unknown, Luckenbach said the finding was novel. No other crab or marine arthropod is known to have this type of innate protection.

## Just a hint of flavor

Effective as it may be against fish, the crab's chemical defense doesn't deter human gastrophiles. At Ryleigh's, Hux reserves pea crabs he finds for customers who know to ask for them. His mother, a chef, also saves pea crabs when preparing



Oyster pea crabs, no larger than nickels

for her restaurant's bull roasts, setting aside the two dozen or so crabs she finds in every gallon of oysters. One man comes and eats them by the spoonful.

Andrew Zimmern (of *Bizarre Foods*) I am not; an entire bowl of pea crabs is just a bit beyond the pale for me. I couldn't even bring myself to grab hold of it with my fingers. The aversion to even a tiny pinch from a crab is as strong as the instinct to avoid a snake bite, and it took me a few long moments to muster the courage to scoop it up with a fork.

I confess. I didn't take too much time to savor it, and immediately chased the morsel with a gulp of water. I was scared I'd feel it wiggle or that it would somehow manage to get a hold of my tongue. But it did have a sweet, briny taste, the essence of lobster, with the chewy crunch of a perfectly roasted chicken.

As an eating experiment, it was a good one. I *do* feel lucky to have had the chance to try a pea crab. I encourage the brave diner in search of some good fortune to try asking the shucker at a favorite oyster bar to leave in any surprises they find — pearl or pea. ■

[seafood.maryland.gov](http://seafood.maryland.gov)

**Michelle Z. Donahue** is a freelance writer who lives in Maryland.

Photos by James J. Donahue III