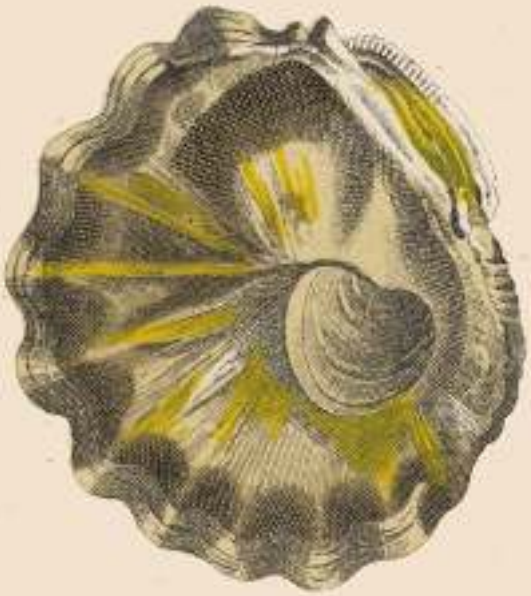

OYSTER

A GASTRONOMIC HISTORY {WITH RECIPES}

DREW SMITH

Sunset over oyster farms in Tainan, southern Taiwan.

DREW SMITH

OYSTER

A GASTRONOMIC HISTORY {WITH RECIPES}

ABRAMS, NEW YORK

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RECIPES

Osias Beert the Elder, Dishes with Oysters, Fruit, and Wine *(detail), c.1620*.

FOREWORD

The Celts did not hold with writing things down; they saw it as weak-minded. The prop storyteller should remember. He should remember things from his father, that came from h father, and from his father . . . if he could imagine that far back—all the way back to Ne Grange Barrow, on the river Boyne 3,400 BC, perhaps, and probably before that, as if there existe some perpetual line of Druid storytelling that would stretch so far.

The Celts were not the only people who were disadvantaged by not writing things down in th great saga of ours. So let us tell it as if we are moored on a packet boat on a Cornish creek, as t swell of the tide lifts us off the mud; or on a warm Louisiana bayou, drifting, waiting for the wind get up, or we are waiting to dive from a galley in the Red Sea or off a row boat off Broom Kimberley, northern Australia.

Waiting, yes, oysters are good at waiting.

Tucked darkly in their calciferous shells, listening warily for dangers, breathing oxygen into th water, sifting the silt, changing sex, the oyster has witnessed all our histories, all our struggles.

Yes, we eat oysters, but that is only one part of our story, their story. The oyster was here before w were. Before once upon a time. Before, you might say, time itself. Back then oyster reefs encircled th continents, a great shelf or ledge between the ocean and the land that we used to haul ourselves up along, whichever it was, and row ourselves around this planet, cove to cove, not cavemen b covemen.

Take one in your hand, feel the scratch of the shell of what we now call rock, prise it apart and yo have Mother Earth’s chronicle of the planet and a taste of the future.

Treat it with respect.

An assortment of fresh oysters. Flavors vary widely, depending on the environmental conditions in which they grow.

ANATOMY OF

AN OYSTER

When the sapid and slippery morsel—which is and is gone like a flash of gustatory summer lightning—glides along the palate, few people imagine that they are swallowing a piece of machinery (and going machinery too) greatly more complicated than a watch.

Thomas Huxley
“Oysters and the Oyster Question”

PERFECT ASYMMETRY

Many things set the oyster apart from other creatures. Most living things are symmetrica We have two arms and two legs, fish are perfectly aligned left to right, birds have tw wings, even most other bivalves have shells that are neatly, roughly equal in size. Not th oyster.

The two sides of an oyster shell are completely different. The top shell is flat, or flatter; the low side is cupped and sagged because all the conchiolin has leached downward by force of gravity. An even though an oyster may choose to grow vertically as well as horizontally, the effect is the sam The explanation is simple, but it has no parallel in the universe.

The oyster is the one stable creature in an otherwise completely changing estuary environmen Biology has often stalled on the underlying challenge of it being almost impossible to draw preci comparisons between oysters, even of the same species, raised in one estuary to those raised another, which is another part of their charming uniqueness. Where everything else moves, the oyst stays still.

To early man the oyster had other virtues. It was portable. Bagged up, it could hang off the side of boat and travel to sea or back home again. Closed up in the shell, the meat stayed fresh and succule for days. It was wholesome, nutritious food, too, full of energy-giving minerals: calcium for bone and vitamins that the early diet would have lacked so badly; a source of nutrition far superior anything else available to wandering Neolithic families.

The oyster was as universal as man, more so in the beginning, whenever that was: Africa, Indi Southeast Asia, Japan, China, the Philippines, Australia, New Zealand, all the Americas; so long a there was a coastline, where the waters were neither too salty nor too pure, not too cold nor too ho the oysters spawned. In Europe they clung to the landmass down from Norway along the North Se through the English Channel, around the edges of the French, Spanish, and Portuguese coasts an formed a collar around the Mediterranean.

Can any thing in this world be more foolish than to think that all this rare fabric of heaven and earth can come by chance, when all the skill of art is not able to make an oyster?

Jeremy Taylor, “Apples of Sodom”

The beds formed a ribbon along the Moroccan coast, penetrated the Black Sea as far as Crimea, an they wrapped themselves around the coast of Ireland. Britain was encircled by oysters even as f north as Orkney. We can presume that Anglo-Saxons survived and were powerful in part because the home on the Frisian peninsula was also an oyster bay.

The semi-salt waters protect the oyster from other predators, and so long as there is a firm rock footing to gain attachment; so long as the sea currents are not so strong as to destabilize the colonie so long as the temperatures are not too extreme; and so long as no hurricane comes to muddy the bed the oyster thrives.

Fresh oysters demonstrating that the top shell is flatter while the lower side is cupped.

Fresh oysters on a market stall, Deauville, Normandy, France.

OYSTER SOUP

Make this recipe in two stages, preparing the stock the day before eating the soup.

Serves 4

2 tablespoons butter

1 leek, topped, tailed, rinsed and sliced thinly, diagonally

1 carrot, peeled and chopped

1 bunch (3 to 4 ounces/75 to 100 g) fresh parsley, tough stems trimmed

3 cups (750 ml) white wine (see Note)

16 oysters, scrubbed

1 bunch (10 to 12 ounces/250 to 300 g) spinach, tough stems trimmed

4 tablespoons heavy cream

Fresh bread

To make the stock, melt the butter in a large saucepan over medium heat. Add the leek and carrot and sweat the vegetables for 5 minutes. Add the parsley as a bunch and pour in the wine. Shuck half the oysters and add them, with their liquid, to the vegetables and wine. Reduce the heat and simmer for 10 minutes. Take the saucepan off the heat and leave to stand.

To serve the soup, return the saucepan to medium heat. Lift out the parsley and discard. Warm your soup plates. Shuck the remaining oysters and add to the warming soup. Throw in a handful of the spinach per person. The moment the spinach wilts—about 1 minute—add the cream. Take the saucepan off the heat. Stir the soup and ladle into soup bowls. Serve with fresh bread.

Note: If making larger quantities, dilute the wine fifty-fifty with vegetable stock.

OF PEDIVELIGERS AND CONCHIOLIN

Oysters spawn in the spring, when the waters start to warm. The young larvae propel themselves alon using cilia, or hairs. When they get older, and stationary, they will use these same cilia to sort the food. The spat travel quite long distances, perhaps 2 miles (3 km) up or out of the estuary. After week they start to sink toward the ocean floor. By then each will have started to grow a shell, an under a microscope can be seen to have taken an oyster shape. After fourteen to eighteen days, the clasp on to a hard object, where they will settle forever.

Unless, that is, man transplants them to different waters to fatten off. Some will take two years reach marketable size, others five or six years. Left to themselves, oysters can live to be fifty or mor Oysters found in Lake Bras, Canada, have been found to be one hundred years old. Finding somethin to attach to before giving up mobility forever is a momentous choice for an oyster. Out of preferenc it will choose another oyster to settle on. The larvae are, even at this stage, particular about the kind foods they may eat and may also be listening out for the calling of the rest of the colony befo committing themselves. There seems to be a primitive communication system that attracts larvae settle near other larvae and oysters.

While the infant ostrea are still floating, they develop a pair of eyes—no one is fully agreed o their function—and a foot that they will use to glue themselves to their final resting place. At th stage they are, scientifically speaking, called pediveligers. If not to another oyster, the youn pediveliger will cling to a hard stationary object like a rock, a mangrove tree, the solid bottom of th estuary, or the post of a pier. They have been found attached to bricks, boats, cans, tires, bottles, eve crabs and turtles. If they are cultivated they will be ushered on to tiles, ropes, sticks, rafts, or bamboo

Hanging in the water, the shell continues to form. The mantle inside absorbs the calcium ion fro the seawater; it secretes the conchiolin, which in time becomes calcified, and forms the shell. Sinc much of the conchiolin secretion occurs around the mantle’s edges, the shape and position of th mantle determine the shape of the shell.

Pacific oyster farmer in Woolooware Bay, Botany Bay, New South Wales, Australia.

THE PURITY OF PLANKTON

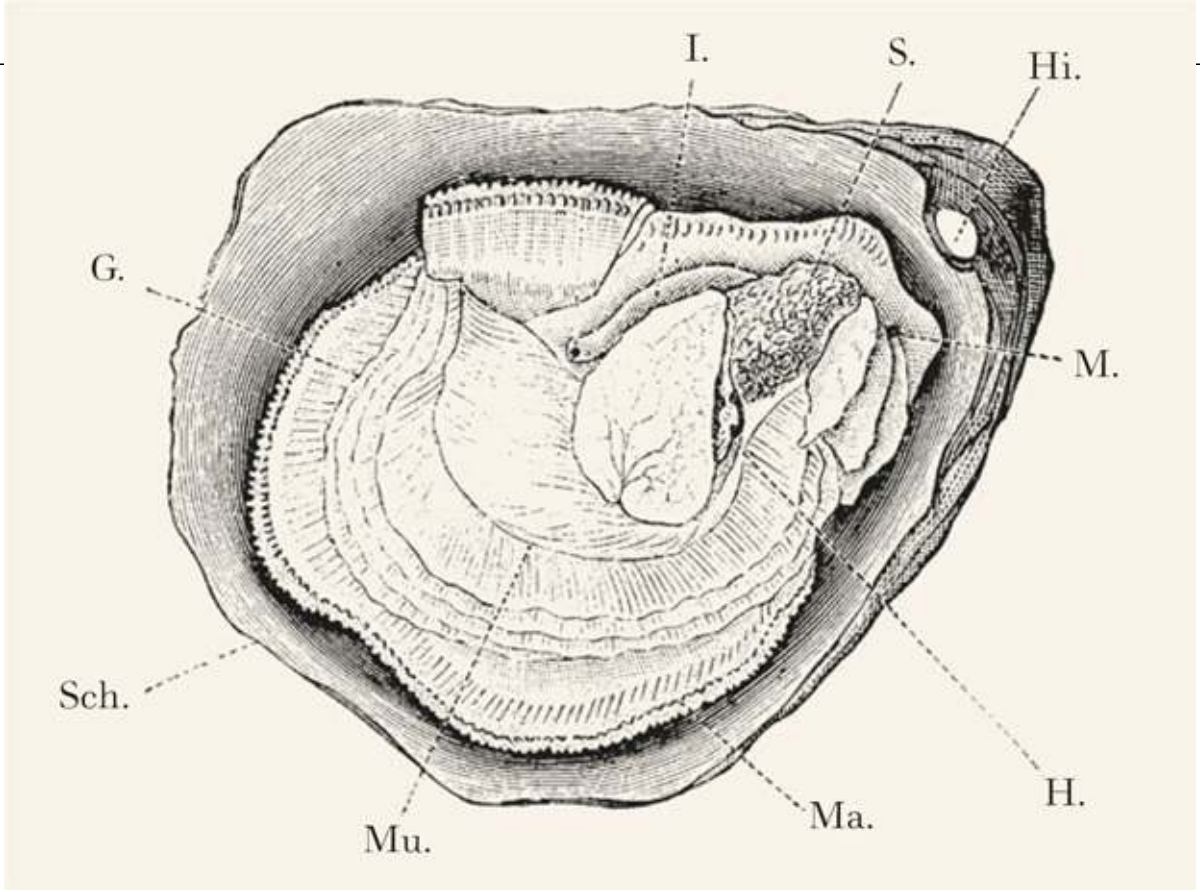
Although the oyster is sessile, its world is far from static. It lives in a constantly changing flow plankton rushing through the estuary, creating myriad shifts in environment and diet, washing th oysters clean as well as delivering the precious algae that they diligently filter and sort. The plankto on which an oyster feeds are an array of micro-matter, pushed around by tides and winds, replenishe by rainfall and washed off the riverbanks—a living soup held in suspension on the ocean currents.

We know what an oyster eats. Scientists have dissected the contents of an adult oyster's stomac and found a constellation of tiny plankton that enjoy their own marine biological sub-language— study as early as 1933 reported the following as an oyster's dinner: algae, tintinnids, silico-flagellate dinoflagellates, ostracods, eggs, and larvae of marine invertebrates, pollen grains from land plant detritus, sponge spicules, and sand. It is because of this plankton that the oyster is such a valuable pa of an estuary ecosystem, and also why it is such a nutritious food itself. In a sense it is pure plankto The richness of this diet allows it to grow, relatively speaking, spectacularly quickly and to crea such a resilient shell in so short a time.

OYSTERS ARE SENSITIVE

Oysters react physically in the same way that we taste or smell. That is an oyster's essential sense. case of danger, they close their shells. They react to light, to levels of salt in the water, to temperatur to shadow and sound. They have complex responses to changes in the environment.

Any disturbing change in the water, or even just a passing shadow, stimulates the nerves of th mantle and causes the adductor muscle to close the shell. The inner ridge, the largest of the three, muscular and mobile. It pumps water in and out of the shell fifteen times a minute, washing the boc and keeping it constantly bathed. As long as the shell stays shut and retains this liquid, the oyster ca ignore most predators, can survive in polluted waters or exposure at low tide, and can withstand th trauma of being transported.



Anatomical diagram showing the internal organs of the oyster (H: heart; M: mouth; Hi: hinge; S: stomach; I: intestine; G: gills; Sc shell; Mu: adductor muscle; and Ma: mantle).

Walk along the beach near an oyster cove at low tide and you can hear—even from quite a distanc —a series of short, sharp spitting sounds as the oysters react and close their shells. They are powerfu Canadian trials have shown that it would take a pull of more than 20 pounds (9 kg) to open up a 4-inc (10-cm) mature oyster that has clamped its shell shut.

An oyster breathes like a fish, using both the gills and the mantle. A small three-chambered hea lies under the adductor muscle and pumps colorless blood, with its supply of oxygen, through th body. An oyster also has two kidneys to purify the blood. The food is sorted by the lips and passed in its digestive system; then, through a coiled intestine, expelled through the rectal chute.

AN UNUSUAL SEX LIFE

Oysters are bisexual, in the original terminology, meaning they can change from one sex to the oth at will. They change from male to female and back again seemingly as they like, even during a sing breeding season. The female lays her eggs in the shell, the male ejaculates, and the sperm is carried her on a wave of plankton. What makes an oyster change sex is a mystery, although a change in wat temperature may be a trigger.

The scientific literature says it was not until 1937 that J. H. Orton in the UK and R. Sparek Denmark realized that oysters were changing sex at all. During Orton's research, a set of laborato oysters marked as females started producing sperm. Astounded, Orton drilled holes in the shell. H watched through a microscope as the females changed into males over a few days. It seemed that soon as the female oyster discharged her eggs, she transformed back into a male quite quickly.

The change from male to female took much longer—weeks, even months, irrespective of th conditions. Being bisexual makes for easier reproduction. Biologically, the oyster's anatomy is almo abstract. The female has no glands for making albumen or need for a womb to protect the egg because she has her awesomely powerful protective shell; nor does the male need a penis or anywhe safe to stash his sperm. Nor is there any paraphernalia needed for courtship. There is simply less to g in the way of a sex change than with other creatures. The follicles produce eggs or sperm, or vic versa—a minor issue for a bivalve. It usually seems that the young ostrea mature as males, the slowly change to become females. A female will guard the larvae in her shell for twelve days and the release them into the estuary to swim off in search of a safe place to settle.

An oyster farmer in Malpeque Bay, off Prince Edward Island in the Gulf of St. Lawrence, Canada, breaks apart clusters of oysters allow proper growth of individual oysters, 1948.

PROTANDRIC OYSTERS

The Pacific *Crassostrea* have no less an interesting sex life, albeit slightly different. They are als able to change sex at will. They will spawn either as males or produce eggs as females and ejacula both seed and eggs into the estuary to fertilize in the water (unlike the ostrea, which lay their eggs the shell, where the females fertilize them). The scientific term for this is “protandric,” which mea the male organs develop first and are then inhibited to allow the growth of the female organs. The begin life male and change to females the following season. After that they seem to prefer to sta female most of the time but will, and can, revert. The older the oyster, the more likely it is to b female. The dictionary describes it grandly as “sequential hermaphrodism.” The ratios on a bed at an given time vary wildly. One study showed 100 females to 73 males, but in another account it was 13 young males for the same level of females.

Not incubating the larvae means as much as 80 percent of the *Crassostrea*’s bodyweight may b turned to sperm or eggs. A male ejaculation in a colony triggers other males to follow suit. Th females sense what is happening and immediately start to release their eggs. Soon the whole reef wi be covered in white clouds of floating eggs and sperm. In the context of a single oyster, fertilizatio seems almost impossible. How can a sperm find an egg when let loose in the wilds of the river? Th answer is that oysters congregate en masse naturally. They spawn across each other. They send ou hundreds of thousands of sperm and eggs at the same time, like pollen. The shells of the paren become the breeding grounds for the next generations.

OYSTER NUTRITION

The way an oyster feeds makes it a highly nutritious food. Dietary textbooks hopefully recommen them for the young, the infirm, and the elderly. The prospect of a granny shucking oysters in h armchair, or a mother slipping an oyster into a sick child’s supper, may smack of nutritional hubri but it was a familiar recommendation from old apothecaries, and the analysis is solid enough. Th oyster would also have made an ideal food for sailors, settlers, fishermen, and early nomadic natives.

A dozen oysters can amount to fewer than 100 calories but are worth as much in protein as a 4 ounce (100-g) steak and contain as much calcium as a glass of milk. Unusually for any living anim or marine food, oysters are also a source of vitamin C. They are low in fat because their fat primarily glycogen and starch. The glycogen (stored glucose) would have been an important source energy, especially useful for people facing long hard days of labor, building new settlements.

The cocktail of vitamins that an oyster provides would have been a viable alternative to fruit an vegetables, and would help stave off diseases like scurvy, particularly for early sailors. Vitamin B1 was thought only to originate in fungi and bacteria, but it is the most pronounced of all the vitam sources found in an oyster. Vitamin B12 influences nerve cell activity, the metabolism in general, an DNA replication, and it improves your mood. It is often prescribed as an aid for depression.

In lesser amounts, in descending order, the oyster will have vitamin B1 (thiamine), which help convert the glycogen into energy, vitamin B2 (riboflavin), vitamin C, niacin, vitamin A, vitamin B and vitamin E.

The highest quantity of mineral in an oyster is zinc, which protects and supports the immun system, helps to heal wounds, and promotes general growth, especially in pregnancy and childhoo Curiously, the next largest mineral is copper. Zinc often inhibits the absorption of copper into th

body, which in turn allows the body to absorb iron. Iron and selenium are the other main mineral among a supporting cast that includes magnesium, phosphorus, manganese, and calcium.

By instinct, if not perhaps by science, early medicine across Europe, going back as far as th Romans, assigned oysters as therapy for a number of ailments, including tuberculosis, catarr stomachache, anemia, and for invalids in general. Pliny was an enthusiast and suggested them f improving the complexion. This was one reason for driving oysters inland to cities.

Oysters in Port Gamble Bay, Washington, USA.