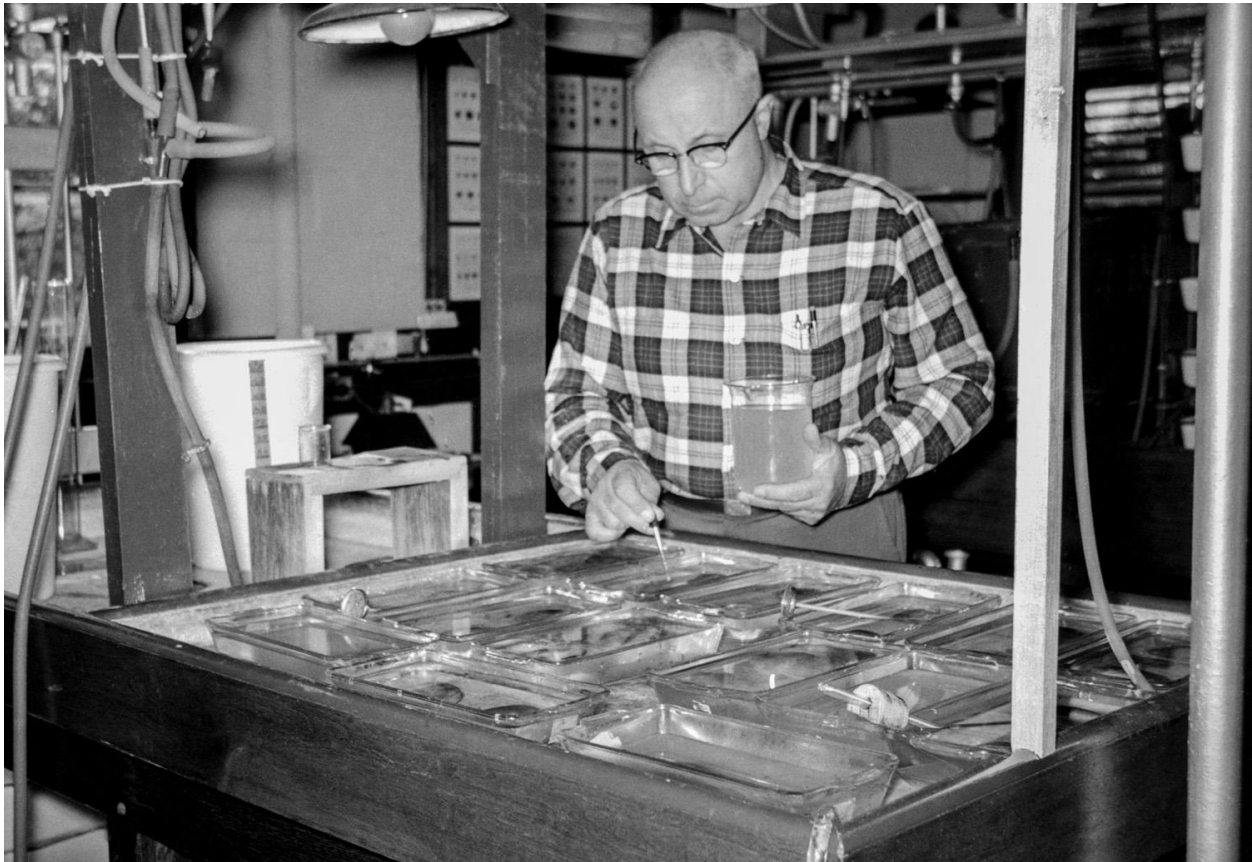


## Victor Lyon Loosanoff (1899-1987): Milford, Connecticut's Unsung Oyster Hero By Ron Goldberg

---



*Victor Loosanoff working at the Milford Laboratory.*

In 1916 as a young man, Victor Lyon Loosanoff, graduate of the Emperor Alexander First Cadet Corp in Russia, could never have imagined what his future would hold in store. He was born into a noble family with a long history of military service to the Czars. His immediate fate would be to continue in his family's military tradition and defend Czar Nicholas' rule against the Bolsheviks during the Russian Revolution. As an officer in the Russian Royal Army he fought in a brutal campaign, retreating eastward across Asia, and eventually reaching Harbin, China in 1921.

At 22 years of age, as a displaced White Russian in China, his early formal education in military science, mathematics, engineering, swordsmanship, and history provided no apparent occupational opportunity. He found work as a railroad detective, chasing thieves from the rail yards. Russian elders in Harbin's expatriate community sought to establish a "new Russia" in America, by providing transit for their "best and brightest". Arriving in Seattle in 1922 with only 47 cents in Chinese coins in his pocket and speaking no English, he was willing to earn his living in any way, taking physically demanding and dangerous jobs in logging and commercial fishing.

In the rough and tumble world in Alaska's logging camps, his physical strength served him well, where the robust 6 footer wrestled and boxed for prize money. There is an anecdote that Victor signed on to a fishing vessel for a few months at sea, motivated to learn English from the crew. At the end of the trip he proudly tried out his new language skills on the docks, only to learn that he was speaking Norwegian!



*Loosanoff and colleagues developed the Milford Method for raising shellfish, used worldwide to this day.*

While pondering prospects for a better life, a friend in a sawmill suggested that he pursue his education at the University of Washington. Initially interested in forestry, a meeting with Professor Trevor Kincaid in 1924 spurred an interest in fisheries. In only three years he earned a Bachelor's degree with honors in Fisheries Science. Victor then accepted a position with the state of Washington's Department of Fisheries and Health. Following this experience, he was hired briefly by the state of Virginia as a shellfish biologist, which would soon lead to a long and distinguished career in Milford Connecticut.

### **Early Federal Career**

In 1931 the then U.S. Bureau of Fisheries was actively striving to improve and expand the country's oyster industry. Victor was hired and assigned to work in Milford by Dr. Paul Galtsoff, Acting Director of the Bureau's Woods Hole Laboratory in Massachusetts. Galtsoff, also born in Russia, had a very different journey to the U. S. compared to Victor's. Galtsoff was university educated in

the sciences in Moscow and as a distinguished scientist, directed research at a marine laboratory in Sebastopol on the Black Sea. As a result of the Revolution, he too was forced to flee his native country. Under threat of the Bolsheviks, he took the lab's best microscope, appropriated the research vessel, fled to Romania, and eventually escaped to New York in 1921. Once in the U.S., he was hired by the Federal government and soon established himself as a leading shellfish expert.

Victor's tenure as a biologist in Milford began modestly in temporary quarters on the shore of the Wepawaug River and eventually a small wooden building was provided by a local oyster company. The commercial oyster fishery in Long Island Sound was in decline and industry leaders had sought assistance from their government. Milford had served as temporary location for Federal oyster scientists' research in prior years, however, Loosanoff's arrival marked what would become an enduring institution. Equipped with only an "oyster knife and a microscope", Victor set out with a goal to improve the productivity of the industry, a mission that he energetically embraced.

At the time the Long Island Sound oyster industry was entirely dependent on natural “seed”, which result when adults spawn and free-swimming larvae attach as “spat” to hard substrates, like old shell. Seed oysters are then moved to underwater shellfish beds, leased from the state. On these beds the oysters grow to a harvestable size. Shellfishermen could either collect natural seed from estuaries or actively place clean shell in areas where spatfall was expected. For the latter method to be successful, timing is essential. If shell is placed too early, it becomes fouled and the oyster larvae won’t set. If the shells are placed too late, the seasonal spatfall is missed. Solving this dilemma was one of the first problems Loosanoff addressed.

Loosanoff and co-author James B. Engle published results of his early studies in a comprehensive scientific paper with the lengthy title; “Spawning and Setting of Oysters in Long Island Sound in 1937, and Discussion of the Method for Predicting the Intensity and Time of Oyster Setting”. He devised a clever way to determine

when and where oysters were setting by deploying small bags of shell in different locations and concurrently measuring a wide range of environmental conditions. This paper identified parameters that the industry could follow in a more methodical approach to seed collection. Not content to remain behind a desk, Loosanoff frequently spent time collecting data aboard the “Shellfish”, the vessel of Connecticut’s Shellfish Commission and routinely engaged those working on the water. Additionally, during the spawning season Loosanoff released regular “real time” bulletins to the industry, providing timing advice on shell planting.

Another research focus was on the predators that eat oysters. Starfish are capable of decimating an anticipated crop of oysters and growers would spend countless hours “mopping” their beds. Large fabric mops were dragged over the beds to which starfish would cling. The mops with attached starfish were then raised on to a vessel and dispatched in a vat of boiling water. These measures were often necessary to prevent loss of an entire harvest. Loosanoff addressed this major concern of the industry by documenting the variation in timing and intensity of starfish presence, as he had done with setting oysters. In one study he dyed 12,000 starfish bright blue to determine their movements! Oystermen noted their presence for 9 months and Loosanoff concluded that the greatest distance of starfish



*Loosanoff served as director of the Milford Laboratory from 1936 to 1962.*

migration only was 5000 feet. He also investigated the use of chemicals, such as quicklime to control oyster predators (although this practice would not likely be permitted today!).

Not all of Loosanoff's research was conducted in the field. He spent countless hours in the lab peering through a microscope to better understand the early life history of oysters and many other molluscan bivalves. He was an experimentalist and devised methods to measure filtration rates and responses to environmental variables. He sought to answer questions about what oysters actually feed on. Importantly, Victor envisioned a process to farm shellfish in the manner of livestock or land crops. Although not fully developed in the 1930s, his future research would directly lead to the egg to market shellfish aquaculture, practiced widely today.

Loosanoff continued his formal education through study at Yale, which led to his earning a Ph.D. in Zoology in 1936. Around this time the shellfish industry was clearly impressed with this young productive scientist. Famed Connecticut decoy-carver, legislator, and early environmentalist Charles "Shang" Wheeler and Howard Beach, member of the Connecticut Shellfish Commission and President of the Oyster Dealers and Growers' Association of North America lobbied Congress to establish a permanent research laboratory in Milford on the Wepawaug River in Milford with Victor as the Director. Funds for construction were approved in 1938 and a substantial well-equipped two-story brick laboratory building was completed in 1940. As was typical at the time, a Director's cottage adjacent to the laboratory was built, where Victor lived with his wife Tamara. The small laboratory staff was expanded to include other trained researchers and scientific productivity grew. In 1951 a 50 foot research vessel was built in New Haven for the laboratory and named the R/V Shang Wheeler after ardent supporter Charles "Shang" Wheeler.

## **Loosanoff as Laboratory Director**

As Director of Milford Laboratory, Victor was clearly a formidable presence. He expected his staff to abide by his rigorous work ethic and could be a demanding taskmaster. It was said that he thought of himself as an orchestra conductor with his staff as the musicians. In a Russian-accented booming voice he demanded steady progress and results from his subordinate scientists. One laboratory researcher was so resentful of the pressure, yet had such deep respect for Victor, that he had a collection of Loosanoff's papers bound in leather and had the spine embossed with the words "the bastard" in Latin. To his credit, Victor had a remarkable ability to identify the pertinent scientific questions that needed to be answered to attain his goal of advancing shellfish propagation.

In a 1951 article in the Saturday Evening Post, Robert Yoder described several days spent interviewing Loosanoff in Milford. At this time, he was a "man in full", having achieved recognition of scientific peers in the U.S. and internationally. Aboard the vessel "Shang Wheeler", Loosanoff hosted the author and described the oyster farming practices on Long Island Sound. In the article there is a photo of Victor eating a raw oyster and the claim that after 20 years of researching oysters he had eaten his first only the year before! The article also describes how Victor and Tamara had special affection for the Mallard ducks that flocked from the shore to their cottage to be fed.

## **A Lasting Contribution: The Milford Method**

One of the greatest contributions of Loosanoff and his team was the development of methods to artificially spawn and rear shellfish in a hatchery. Research had revealed the secrets of laboratory manipulation of seawater temperature to induce gamete production out of season, stimulate spawning of egg and sperm, fertilization of eggs, and the culture of embryos and larvae. Methods were devised to grow large quantities of the microalgal cells, necessary to feed the growing larvae. Additionally, problems were solved to enable the nurturing the free-swimming larvae through a metamorphosis when they settle as tiny versions of the adults they will grow in to. Loosanoff was able to build on previous science and advance it with innovative ideas to demonstrate a hatchery for shellfish. Much of the entire process is practiced in aquaculture facilities worldwide today and is often referred to as the “Milford Method”.

This advance led to an alternative approach to shellfish cultivation, widely employed today which relies solely on hatchery produced seed. Growers attain the seed from hatcheries and then plant them in natural waters, protected from predators in cages or by netting. This method of shellfish farming has expanded rapidly in all coastal waters of the U.S. and the world. Much of the recent resurgence of availability and popularity of oysters are through these intensive aquaculture practices.

Coastal aquaculture of shellfish is also favored as an environmentally friendly endeavor, where shellfish help remove unwanted nutrients from seawater, which contribute to eutrophication. Eating shellfish that are “low on the food chain” also presents an ecologically sound alternative to more energy consumptive types of food production.

Victor’s legacy endures today. He and colleagues published over 200 scientific papers and articles. He was a leader among his scientific peers and received many awards and honors for his achievements. In 1962 he stepped down as Milford Laboratory’s Director, moved to California, and took another Federal fisheries position. He also taught at the University of the Pacific until his retirement in 1965.

The Milford Laboratory that Victor founded on the shore of the Wepawaug River almost 90 years ago still exists today. A new laboratory facility was completed in 1967. Today it is part of the National Oceanic and Atmospheric Administration, Northeast Fisheries Science Center. In addition to continuing Victor’s vision of conducting research to advance shellfish aquaculture, laboratory scientists study contemporary environmental concerns, such as ocean acidification.

Victor Loosanoff’s life journey from Russian military officer to a world renown shellfish scientist is an unlikely story. Upon his arrival in the U.S. in 1922, nearly penniless and not speaking the language, Victor’s ambition and hard work resulted in a productive and successful life. His story also highlights how this country can provide opportunity for all immigrants and the contributions that they can make to our society.

*Contact: Ronald Goldberg (ronaldgoldberg52@gmail.com)*

*July 2020*