Pioneering Shellfish Biologists Series
Victor L. Loosanoff

by Maille Lyons

Victor Lyon Loosanoff was born on October 3, 1899 in Kiev, Russia. As the son of an Imperial Russian Army officer, he was educated at Russian military academies. At the age of 17, he graduated from the Emperor Alexander First Cadet Corps in Osmk and served 4 years as an artillery officer in the Royal Russian Army. He escaped the 1917 Bolshevik Revolution, firing a machine gun from the back of a train[1], and finding his way through Siberia, China and Japan before immigrating to the west coast of the United States in 1922. He learned English while working in lumber camps and as a commercial fisherman before enrolling at the University of Washington in 1924. Under the guidance of Dr. Trevor Kincaid, he graduated three years later with a B.S. in Fisheries Science (with honors) and began working for the Department of Fisheries and Health in the State of Washington. In 1931, he moved to the east coast to become the Chief Marine Biologist of Virginia. The following year Dr. Paul Galtsoff, as the acting Director of the Woods Hole Bureau of Fisheries Laboratory, hired Loosanoff to go to Milford, Connecticut as an Aquatic Biologist with the U.S. Bureau of Fisheries. Shortly after moving to Connecticut, he began graduate studies under invertebrate zoologist Dr. Wesley R. Coe at Yale University, earning his Ph.D. in Zoology in 1936. From 1935 to 1962 Loosanoff served as the Director of the U.S. Fish and Wildlife Marine Biological Laboratory in Milford, CT. In 1962 he moved back to the west coast to become a Senior Scientist with the Bureau of Commercial Fisheries at the Bureau of Sportfish and Wildlife Laboratory in Tiburon, California. At the same time, he was appointed an Adjunct Professor at the University of the Pacific where he supervised marine biology students at the Pacific Marine Station. Although he retired in 1965, he remained active in research and consulting up until his unexpected death in 1987.

Victor Lyon Loosanoff (1899-1987)
(Photograph: G. Sennefelder, Milford Laboratory)

Victor Loosanoff spent most of his illustrious career at the Milford Laboratory. Starting with a mere one-room wooden building, his research focused on the struggling commercial oyster fisheries in Long Island Sound. Oyster stocks had been steadily declining for years and public attention turned toward experimental culture techniques for stock enhancement. His detailed, comprehensive work on the artificial propagation of shellfish larvae resulted in the development of revolutionary methods for the aquaculture industry. At that time, no one in the world could consistently maintain and develop substantial numbers of bivalve mollusc eggs to a large enough size to be planted as seed. Under Loosanoff's strict direction, his laboratory developed methods for year-round spawning of molluscs and in the process demonstrated that there was no relationship between oyster spawning and lunar phases as others had proposed. His methods allowed biologists in seasonal climates, such as Long Island Sound, to work with eggs and larvae throughout the year. Along with his colleague, H. C. Davis, he designed a novel technique to raise bivalve larvae focusing on the nutritional value of several species of naked flagellates for live food and of dried algae for preserved food. Loosanoff launched the career of Dr. Robert Guillard[2] who would go on to design and develop pioneering culturing techniques of phytoplankton. Loosanoff's team also described ecological and physiological requirements of bivalve mollusc

larvae including ranges and optima for salinity, temperature, pH and food concentration. His laboratory was the first to develop successful methods of rearing oysters through metamorphosis in a hatchery, and the first to rear larvae of the northern quahog, *Mercenaria mercenaria.* Earlier attempts to cultivate bivalve mollusc larvae failed, in part, because of mass mortalities from fungi, bacteria and protozoa. The Milford biologists discovered many disease-causing microorganisms were controllable via antibiotics, sulfa drugs, fine filters and ultraviolet rays. They provided immediate, practical advice to hatchery operators such as raising the water temperature by a few degrees above that tolerated by pathogens, but within that tolerated by larvae. Loosanoff generously shared his research and distributed microscopic preparations made from bivalve mollusc eggs produced, fertilized and raised in the laboratory to increase the accuracy of bivalve mollusc larval identifications at other laboratories. Due to his perseverance and success, the Bureau of Fisheries established a full-scale, permanent, research laboratory dedicated to shellfish research. This included the construction of a new 4,800 square foot brick building that Loosanoff helped design, including its laboratory, facilities and program. Victor Loosanoff began by continuing the preliminary work of Drs. Paul Galtsoff and Herbert Prytherch on the artificial propagation of oysters and eventually became "The Father" of U.S. Shellfish Hatcheries[3]. In addition to culturing techniques, Loosanoff was keenly interested in the control of oyster predators including the common (*Asterias forbesi*) and purple (*Asterias vulgaris*) starfish. He conducted thorough research on their basic biology, feeding behaviors and susceptibilities to chemical control methods. Loosanoff developed "an easy, inexpensive, and practical"[4] method for tagging and tracking starfish in the field to describe their natural behaviors. He determined starfish have "no definite inshore or offshore migration"[4] and the longest distance traveled by an individual was less than one nautical mile per year. Loosanoff's tagging method transformed starfish from their natural color to a distinctive green or greenish-blue which lead to sensational stories of Irish starfish invading Long Island Sound.

Victor Loosanoff was an active member of the National Shellfisheries Association (NSA). At annual meetings he led enthusiastic discussions on diverse topics including: starfish problems in Long Island Sound (1937), spawning and setting of oysters in Long Island Sound and the chemical control of predatory starfish (1938), cultivation of the edible blue mussel and spawning of oysters at different depths (1942), mussel resources in the North Atlantic (1943), laboratory culture of quahog larvae (1949), oysters in low salinities (1951), and spawning, larval abundance, distribution and setting of oysters (1954). He served as president of NSA from 1947-49, a time that he described as "a new era in shellfisheries."[5] Loosanoff oversaw the transition from small groups of biologists independently conducting shellfish research, to larger, state centered and private research laboratories. He observed the expansion of shellfish research beyond the oyster to include commercial fisheries for hard and soft clams. He witnessed the change from older, traditional cultivation methods to newer harvesting devices and technologies. In 1963 he was elected an Honored Life Member and remembered for "the energetic, persistent, and often ingenious way he approached the problems of our industry"[6] and as "one of our most distinguished and honored shellfish scientists."[6] He authored over 200 popular and scientific articles, many of which are still cited in current literature. He was also an active member in the American Society of Zoologists, Sigma Xi and the Connecticut Academy of Arts and Sciences. Among his numerous honors and awards, Loosanoff received the Distinguished Service Award from the Department of the Interior in 1965 for his contributions to fishery sciences and the *R/V Victor Loosanoff* is a 49-foot research vessel docked at the Milford Laboratory. The sponge, *Acervochalina loosanoffi* (Hartman, 1958), was also named in his honor.

Victor Loosanoff and a catch of starfish.

Those who knew him describe Victor Loosanoff as a man who never hesitated to speak his mind. He had a loud, commanding voice and was often harsh and uncompromising especially when he disagreed with a newly proposed theory. Loosanoff was an extraordinarily hard and meticulous worker and demanded as much from those with whom he worked. Although outwardly confident, he feared his laboratory would loose funds if papers were not regularly produced and thus he expected his staff to publish at least one paper per year. He liked to think of himself as an orchestra leader conducting an orchestra and his staff as

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the instrument players[7]. Director Loosanoff visited each staff member every day and demanded a thorough progress report once a month. When he was upset with the strength of a report he would bellow that he wasn't "running a country club for college boys."[7] If an employee was late, they were excused for the day, if it happened a second time, they were fired[1]. His relationship with another prominent Russian biologist, Dr. Paul Galtsoff, was intense and to some degree competitive, but their spirited debates at meetings would inspire and entertain the younger, future leaders of the NSA[8].

On June 15, 1987 at the age of 87, with his health deteriorating and his eyesight all but gone, Victor Loosanoff ended his life. He was survived by his loving and supportive wife of 59 years, Tamara. Tamara was a petite, pleasant woman known for calming Victor down whenever he got angry at a colleague. Tamara also explained his unusual practice of calling all female students and employees "sweetie"[1]. Victor had trouble remembering the name of his secretary even though she worked for him for over 10 years. He often called her by other names, or referred to her as "you" or "lab secretary". On one occasion, after being called the wrong name, the secretary was "uncontrollably sobbing". Victor, not wanting to lose such a loyal employee, decided to "minimize" the problem by simply calling all the women he met "sweetie". Tamara admitted he occasionally even called her "sweetie"[1]. The Loosanoffs lived in a house overlooking Milford Harbor, a convenient 35 feet from his laboratory, with as many as 50 mallard ducks. Loosanoff fed and observed the ducks daily, curious to see which males were loyal to their mates[7]. The Victor and Tamara Loosanoff Fellowship generously supports graduate students at the School of Aquatic Fishery Sciences at the University of Washington undertaking studies with marine invertebrates. Victor Lyon Loosanoff is remembered as one of the famous early shellfisheries biologists.

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