

# This Week's Citation Classic

Lasker R. Feeding, growth, respiration, and carbon utilization of a euphausiid crustacean. *J. Fish. Res. Board Can.* 23:1291-317, 1966. [US Bureau of Commercial Fisheries, Fishery-Oceanography Center, La Jolla, CA]

***Euphausia pacifica* juveniles and adults maintained in the laboratory molted at intervals of three to eight days depending on temperature. Crustacean nauplii were found to be a preferred food and over 80 percent of ingested carbon was assimilated. While the oceanic population incorporated about nine percent of the carbon eaten, rapidly growing animals incorporated as much as 30 percent. Molts and dead bodies amounted to over seven times the biomass as detritus in a year. [The SCI<sup>®</sup> indicates that this paper has been cited in over 125 publications since 1966, making it one of the most-cited papers ever published in this journal.]**

Reuben Lasker  
Southwest Fisheries Center  
National Marine Fisheries Service  
National Oceanic and  
Atmospheric Administration  
US Department of Commerce  
La Jolla, CA 92038

April 12, 1983

"As a young scientist in 1950-1952, I had the good fortune to be able to study the world of marine plankton with Hilary B. Moore, then professor of marine biology at the University of Miami's fledgling Marine Laboratory. One of my claims to fame must be that in the summer of 1951 I was the sole student in Moore's marine plankton course in which I dutifully took notes in lecture after lecture, an unusual formalism to say the least. He imbued me with an abiding interest in the shrimp called krill, the euphausiids, which he had studied off Bermuda just after World War II.

"Near the end of my PhD studies at Stanford University in 1956, a notice appeared in *Science* announcing a Rockefeller Foundation-sponsored symposium on marine biology at the Scripps Institution of Oceanography convened by Adriano Buzzatti-Traverso. It offered 'qualified graduate students' \$50 and a train ticket to La Jolla to attend

this conference to which every famous marine biologist then living had been invited, or so it seemed to me. I applied and received the money and ticket and consequently took advantage of the situation by convincing Buzzatti-Traverso that I was the man he needed to advance the culture and study of an important marine organism, the euphausiid shrimp. The idea had germinated during my introduction to the field under Moore's tutelage. In what seemed like blinding speed for the offer of a postdoctoral position, I received a letter after my return to Stanford informing me of my postdoctoral fellowship at Scripps Institution of Oceanography at \$5,000 for the year, an enormous amount of money to me.

"The results of some preliminary experiments with live euphausiids obtained 12 miles off San Diego with a plankton net were published in *Science* in 1960.<sup>1</sup> These paved the way for the more extensive study which has proved to be so popular with my colleagues. I suppose one achieves a *Citation Classic* by being first and there were a few firsts in this study. Gail Theilacker and I were first to keep euphausiids alive, eating, and growing in the laboratory<sup>2</sup> and this led to the interesting findings that *Euphausia pacifica* molts about every five days in the sea; that contrary to then current ideas, carnivorous feeding was the norm rather than the exception; that aggregations of nauplii are needed to satisfy the animal's metabolic needs; and detrital production from molts and dead bodies could amount to seven times the biomass of euphausiids in a year.

"This paper won a Superior Performance Award for me in 1968 from the US Department of Interior's Bureau of Commercial Fisheries in whose La Jolla laboratory most of this work was done and where I was employed as a physiologist.

"An upsurge in plankton studies and the recent interest in the Antarctic krill, *Euphausia superba*, has undoubtedly contributed to the citation success of this paper. An exhaustive review of euphausiids was written by Mauchline and Fisher in 1980."<sup>3</sup>

1. Lasker R. Utilization of organic carbon by a marine crustacean: analysis with carbon-14. *Science* 131:1098-100, 1960.

2. Lasker R & Theilacker G H. Maintenance of euphausiid shrimps in the laboratory. *Limnol. Oceanogr.* 10:287-8, 1965.

3. Mauchline J & Fisher L R. The biology of mysids and euphausiids. *Advan. Mar. Biol.* 18:3-637, 1980.