



William N. Tavolga, professor emeritus of biology at City College of New York (CCNY) and senior scientist emeritus at the Mote Marine Laboratory (MML; Sarasota, FL), passed away on April 28, 2017, in Sarasota, FL. Born in New York City to émigré Russian musician parents, as a child Bill was always turning

over rocks and making lists, circumventing his father's ambitions for him to become a concert pianist. Bill graduated from CCNY and received his doctorate in fish reproductive biology from New York University (NYU) in 1949. He then joined the faculties at CCNY and the Department of Animal Behavior at the American Museum of Natural History.

Bill was one of the true pioneers in the field of sensory biology of aquatic animals and, in particular, animal bioacoustics. Indeed, much of the work being conducted in that discipline today by Acoustical Society of America members has been influenced, directly or indirectly, by his contributions. Bill originated the phrase Marine BioAcoustics and was one of the early pioneers and founders of the field through his research and the reviews and meetings he organized (e.g., Tavolga, 1964).

Bill started working on fish bioacoustics after being asked by a friend if fish make sounds. Lacking a hydrophone, Bill took a cheap microphone and waterproofed it with a condom. Using this device, he heard sounds from gobies (bottom-dwelling fish), and this led to a study that, for the first time, demonstrated that a fish species incorporated sound, chemical signals, and visual signals in courtship behavior and that courtship stopped if the sounds stopped (Tavolga, 1956).

Having explored sound production, Bill wanted to know how well fish could hear. Although this had been studied by others, Bill was the first to apply modern psychophysical and quantitative methods to measure fish hearing. His first studies on hearing provided auditory thresholds for nine species (Tavolga and Wodinsky, 1963) and he later character-

ized masking in fishes (Tavolga, 1974). Bill did a wide range of other behavioral and anatomical studies, demonstrating sound production mechanisms in a marine catfish and showing that the fish can use its sounds to echolocate around objects (Tavolga, 1977). Bill produced one of the first collections of marine animal sounds, including invertebrates, fishes, and marine mammals, complete with sonograms and an accompanying cassette tape for the US Navy (<http://acousticstoday.org/tavolga>). Bill continued to work at MML after officially retiring. He published research on ultrasonic hearing in fishes when he was 80 years old, and his last scholarly paper was published when he was 92.

Bill had other interests besides marine bioacoustics. He was an accomplished pianist and lover of all kinds of music. He was fluent in Russian and the author of the first Russian-language word processor, *Volgawriter*, (<http://www.volgawriter.com/>).

Bill met his wife Margaret at NYU. She was professor emerita of biology at Fairleigh Dickinson University (Teaneck, NJ) and died after almost 50 years of marriage. Bill leaves his loving partner, Paula John, and a worldwide circle of colleagues and friends who remember Bill as an extraordinary teacher, scholar, mentor, and role model.

Selected Articles by William N. Tavolga

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- Tavolga, W. N. (Ed.). (1964). *Marine BioAcoustics*. Pergamon Press, Oxford, UK.
- Tavolga, W. N. (1974). Signal-noise ratio and the critical band in fishes. *The Journal of the Acoustical Society of America*, 55(6), 1323-1333.
- Tavolga, W. N. (1977). Mechanisms for directional hearing in the sea catfish (*Arius felis*). *Journal of Experimental Biology* 67, 97-115.
- Tavolga, W. N., and Wodinsky, J. (1963). Auditory capacities in fishes: Pure tone thresholds in nine species of marine teleosts. *Bulletin of the American Museum of Natural History* vol. 126, article 2.

Written by:

Arthur N. Popper, *Email:* apopper@umd.edu

University of Maryland, College Park

David A. Mann, *Email:* dmann@loggerhead.com

Loggerhead Instruments, Sarasota, FL
