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### Title

Ralph A. Lewin Biography

### Permalink

<https://escholarship.org/uc/item/90h0j6b7>

### Author

Scripps Institution of Oceanography Archives

### Publication Date

2024-11-19

# Ralph A. Lewin Biography

SIO Archives, 2011



Ralph Arnold Lewin was a leading authority in multiple areas of marine biology and became known as "the father of green algae genetics."

"Dr. Lewin had a remarkable wit and enjoyed instructing us all on the peculiarities of English. He was also original as an observer of natural phenomena such as oil droplets in algal cells. He was one of the most well-traveled, scholarly people I have known," said Scripps Marine Biology Professor Victor D. Vacquier, a longtime colleague of Lewin's.

Lewin and his wife, Scripps biologist Lanna Cheng, were familiar fixtures around the Scripps

campus and La Jolla community for decades.

Born in London, England, on April 30, 1921, Lewin was educated at Cambridge University, receiving a B.A. degree in botany in 1942 and M.A. in botany in 1946. He came to the United States to continue graduate studies at Yale University and was awarded a Ph.D., also in botany, in 1950. He also was awarded a doctor of science degree from Cambridge University in 1972.

As a young expert in marine seaweeds (algae), he was enlisted during World War II to survey the entire coastline of Great Britain to estimate the quantity of algae present for potential fermentation in the production of fuels and organic liquids needed for the war effort. After obtaining his doctoral degree, he spent the next five years working in Nova Scotia as an algal biologist for the National Research Council of Canada. From 1956 to 1959 he was a research algologist at the Marine Biological Laboratory in Woods Hole, Mass.

Lewin joined Scripps Institution of Oceanography as associate professor of marine biology in 1960 and retired from that position as full professor in 1991. Although retired, he remained extremely active in laboratory and field research and lectured nationally and internationally.

His early research concerned the genetics of single-cell green algae, specifically their mechanism of sexual reproduction. He developed simple methods to select for mutant cells, thus making possible genetic studies and giving him the title of "the father of green algae genetics." His first investigations at Scripps were on marine microbes, known as flexibacteria that glide over surfaces. A genus of flexibacteria, *Lewinella*, was named in his honor. He later became interested in the electron microscopic anatomy of algal flagella, the long, thin beating structures used by algal cells to swim.



Ralph Lewin and Lanna Cheng at their La Jolla home in 1999.

In the 1980s he was the first person to understand and publicize the evolutionary significance of a primitive group of marine algae known as the "prochlorophytes" or more simply "*Prochloron*," a likely ancestor of green plant chloroplasts. Lewin was considered to be the world expert on these unique marine organisms.

He was one of the first scientists to be involved in using algal cells to condition agricultural soils to hold more water. He also was one of the first to show that some single-cell algae can produce important oils, today a subject of great importance in the search for alternative sources of energy.

In the 1980s the San Diego Zoo called Dr. Lewin to ask why their polar bears were turning green. Microscopic examination by Lewin showed that the hollow hairs of the fur were harboring a single-cell blue-green algae that was dividing in this protected environment. A bath with a low concentration of bleach turned the green bears white again.

Lewin and Cheng, a Scripps marine entomologist, were well-known visitors of marine research laboratories throughout the world. Lewin enjoyed an international reputation as an engaging, humorous lecturer in the United States, Canada, Europe, South America, Asia and China. He helped organize and teach courses on marine microbiology and algae for UNESCO in Finland, Singapore and China.

In 1967 Lewin was awarded the Darbaker Prize by the Botanical Society of America. In 1970 he was president of the Phycological Society of America (PSA). In 1982 he was National Lecturer of the PSA.

Lewin published more than 250 scientific papers, edited "Physiology and Biochemistry of Algae," "The Genetics of Algae," "Origins of Plastids" and, with Cheng, "*Prochloron*: a Microbial Enigma," and was author of "Merde, Excursions in Scientific, Cultural and Socio-Historical Coprology."

He also was known for his poetry, including such works as "Poems about Animals and Plants" and "The Biology of Algae and Diverse Other Verses." He was an expert in Esperanto and translated "Winnie the Pooh" into that language.

Lewin was a member of the following scientific societies: Society of General Microbiology, British Phycological Society, Phycological Society of America, Sigma Xi, Society for Experimental Biology, International Phycological Society, International Society of Applied Phycology, Marine Biological Association of the United Kingdom, Zoological Society of San Diego, the Western Society of Naturalists and a Wilkins Fellow of Downing College.

Ralph Arnold Lewin passed away on Nov. 30, 2008, in La Jolla, Calif. In addition to Lanna Cheng, Lewin's survivors include his brother Basil Lewin of England and many nieces, nephews, grand nieces and grand nephews.

Adapted from Scripps News, 4 December 2008