Oscar Ravera at the ceremony for his nomination as UNEP Global 500 laureate in 2001 for Environmental Achievement.

IN MEMORY OF OSCAR RAVERA

Oscar Ravera was one of the most lively and active protagonists in the field of ecology. A man of great culture, Oscar had a genuine interest in knowledge, an interest fed by his insatiable childlike curiosity. Arriving young, at Pallanza, he found fertile ground to develop his passion for aquatic ecology, a passion that led both to important scientific achievements, and to very large-scale initiatives.

Those who had the fortune to work with him soon learned of his uncommon inclination to include students and young researchers in his various discussions and original projects, and of his ability to translate ideas into practice through the design and construction of novel field and laboratory instruments. Oscar, not only conceived of innovative research projects, but he also developed many new study techniques. He embodied the profile of the perfect researcher, skilled both in the field (those who saw him at work on the lakes were filled with admiration) and in the laboratory.

Thanks to the sweet memories of the years of his youth spent at Pallanza, we had the opportunity to host Oscar again at the Institute during his last fifteen years.

With him, an important piece of our limnological history and of the history of the ecological thought has gone. We have lost a friend, a teacher, and a colleague, who contributed greatly to the growth of the scientific community he pioneered.

Oscar Ravera (1925-2015) started his career in 1949 at the Istituto Italiano di Idrobiologia, under the Direction of Prof. Edgardo Baldi. Here he stayed until 1956 performing basic research in limnology, which gave him a basis for further studies on theoretical and applied problems in fresh and brackish water ecology. After two years working as a Chief of the Micropaleontological Service, Dept. of Mining, for the Edison Company, he carried out 30 years of scientific activity at the Joint Research Center (J.R.C.) of the Commission of the European Communities (C.E.C.). His activity made the J.R.C. one of the most important reference points in Europe in the field of aquatic ecology. After his retirement from the J.R.C. he held the Chair of Ecology at the University of Venice (Ca' Foscari) until 1997. Since 1998, his passion for research brought him back to his origins, at the Italian Institute of Hydrobiology (presently the CNR Institute of Ecosystem Studies).

Out of many ecological topics he pioneered during his long career four relevant ones were:

- contamination of lake ecosystems by radioisotopes and the biological effects of ionizing radiation
- eutrophication processes and the search for corrective strategies and interventions
- accumulation of trace metals by freshwater mussels, and the effects of trace metals on the planktonic community
- evaluation of the state of the Venice canals and the production and decomposition of macroalgae in the Lagoon of Venice.

His discovery of the great accumulation by freshwater mussels of ^{54}Mn from fall-out (100,000 times the concentration in lake water) was one of the most convincing demonstrations for modifying the European radioprotection rules on the risk of the bioconcentration of radioisotopes. The same methods used in the study of radio-contamination were transferred to the study of heavy metal pollution, producing important results in the assessment of the fate and the biological effects of low concentrations of toxic metals. His best results were obtained by applying, as a pioneer in Italy, the "*mesocosms*" method in tackling ecological and pollution problems. As an example, these experiments provided a better insight into the role of lake trophic conditions as an amplifier or a minimizer of the biological effects of toxic metals.

He was also one of the first to use fall-out radioactivity for dating lake sediments. He used short-life zooplankters as *sentinels* of radioactive contamination and the fate of radionuclides in lakes, and long-lived mussels as bioaccumulators of radioisotopes over time.

In addition to his scientific research, Oscar had broad involvements as adviser to the Commission of the European Communities (CEC, Bruxelles) in formulating environmental research programmes (1971-1990). He was a member of the Technical Bureau of the OECD International Programme on Eutrophication (1972-1980); a member of the Technical-Scientific Committee of the International Commission for the protection of Italian-Swiss waters (1972-1987); the scientific coordinator of the UNESCO International Expert Group on the Lagoon of Venice (1997-1999); a member of the Special Programme Panel Ecosciences of the NATO - Bruxelles (1979-1983) and several others. Also, he collaborated with the International Expert Commission, coordinated by Prof. Ph.

Bourdeau, on the environmental impact of the mobile flood barriers on the Venice Lagoon (1998).

He numbers, among his major achievements, the promotion of ecology in Italian universities, the training of many Italian and foreign students, and helping to raise the consciousness of the general public as regards ecological concepts and the principles of environmental ethics. He was cofounder, president and emeritus member of the Italian Society of Ecology (S.It.E.). In collaboration with Prof. A. Moroni (Parma) he brought ecology to a firm footing in the academic community of Italy, National representative of the European Ecological Federation (EEF) and of the Societas Internationalis Limnologiae (SIL), he was awarded as Global 550 Laureate in 2001.

Between 1949 and 2012, Oscar authored more than 240 papers, those listed below representing only a small part of the breadth of the ecological topics that he investigated.

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