

LIFE HISTORIES OF HONORARY IHSS MEMBERS



Egil T. Gjessing

Egil Trygvesøn Gjessing was born in Saltdalen, Norway. A small village located just north of the Arctic Circle. Children of a physician who practiced medicine at a tuberculosis sanitarium in the isolated mountains, he and his brothers and sister grew up in an area with few human inhabitants. However, Egil always enjoyed the open air of his native Norway and this led to a life-long love of outdoor sports, including skiing, which for a Norwegian is a skill learned at about the time one learns to walk.

He began his journey in higher education and science at the University of Bergen, where he received his Bachelor of Science degree (Candidatus magisterii), with emphasis in Chemistry, Physical Geography and Applied Mathematics. He followed this degree with the Master of Science (Candidatus Scientiarum) degree in Organic Chemistry from the same university.

Following receipt of his Candidatus Scientiarum, Egil took a position as a research assistant for the Norwegian Fisheries Research Institute in the western part of Norway. For two years, he supervised two research projects: "Effects of Salting on Hard Herring Roe" and "Insecticides for Protection against Blow-flies in the Stockfish Industries." Subjects that did not indicate his later interests.

In 1962, Egil took a position with the Norwegian Institute for Water Research (NIVA). During his early years at NIVA, he was responsible for all research on humic substances in aquatic systems. In 1965, he took leave to participate as a post-doctoral associate in the Water Chemistry Laboratory of the University of Wisconsin, Madison. For one year, he conducted studies on organic matter in water. He returned to NIVA and remained there in various capacities until his retirement in 1994.

Egil was extremely active while at NIVA, publishing 40 papers on humic substances in aquatic systems. From 1972-1986, he was Project Leader in the SNSF –Project ("Acid Precipitation - Effects on Forest and Fish"). During this period, he worked on problems connected to the effects of polluted precipitation on Norwegian surface waters. He was in charge of the hydrobiological and hydrochemical part of this-Norwegian Interdisciplinary Research Project. He also was engaged in a program on toxic pollutants in the aquatic environment, and again was in charge of the activities on drinking water problems at NIVA.

Despite his busy schedule at NIVA, he managed to complete and receive his Doctor Philos from the Department of Limnology at the University of Oslo in 1981. With all of these accomplishments, the one that perhaps is closest to his heart and is certainly one that many researchers in the field know him by was the publication in 1976 of the first book on the topic: Physical and Chemical Characteristics of Aquatic Humus. In this volume, Egil succinctly summarized the knowledge base of humic substances in aquatic systems by treating them from the point of view of naturally

occurring materials and the problems they cause in water treatment. In this writer's opinion, a major contribution of this book is its consideration of the importance of biological processes in the cycling of aquatic organic matter, which had been largely overlooked at the time. However, more important is the final chapter, "Further Work". In only three pages, Egil identifies and outlines four areas of study: "Source of Energy to Microorganisms," "Humus as a Pollutant Carrier," "Charge and Electromobility" and "Decomposition of Humus", which refers to the UV irradiation and hydrogen peroxide oxidation of the materials. In addition, he correctly points out the potential interest in these materials in the field of medicine. All of these areas have since produced an enormous literature and continue to be major areas of research today.

Following the publication of this book and completion of his Doctor Philos degree in 1981, he initiated the first-ever international meeting on humic substances. Co-chaired and hosted by his close friend and colleague Dr. Russ Christman at the University of North Carolina, Chapel Hill and funded by NIVA and the U.S. Environmental Protection Agency, this 1981 meeting produced a symposium volume entitled, "Aquatic and Terrestrial Humic Materials" with an author list that reads like a Who's Who of natural organic matter studies at the time. The symposium and volume turned into the springboard for the formation of the International Humic Substances Society and the 1983 inaugural IHSS Biennial Meeting in Estes Park, Colorado. Egil was a founding member of the IHSS and subsequently served on the Board of Directors.

Founding members at the Meeting in Estes Park, from left to right, front row: P. McCarthy, H. P. Ringhand, F. Andreux, M. Schnitzer, S. Kuwatsuka, P. Sequi; back row : D. Reckhow, E. T. Gjessing, E. M. Thurman, R. S. Swift, R. L. Malcolm.



Back at NIVA, Egil continued his long-time interest in the effects of acid precipitation on the fragile aquatic ecosystems of Norway, many of which are buffered by the natural organic matter in their waters. In 1987-88, he was Division Manger of the Environmental Engineering Division of NIVA and had strong interactions in the Canadian-Norwegian Project RAIN (Reversing Acidification in Norway). Simultaneously, he was Secretary-General of the Norforsk Project on Drinking Water. From 1988-90, now a Senior Research Scientist at NIVA, he concentrated on the role of humic substances in water as they interact with acidification and the mobilization of micropollutants. This led to his being named in 1990 the Scientific Leader of the HUMOR Project (Humic Substances, Modifiers of the Response of Aquatic Systems to Acidification), an international research program involving 6 countries. During this period he was also named Scientific and Administrative Leader of Project HUMEX (Humic Lake Acidification Experiment), which involved partitioning a lake and artificially acidifying one side of the lake and its attendant watershed. This latter project included literally tens of scientists from many countries. He continued in this role until his retirement from NIVA in 1994.

As if the above duties weren't enough, it was during this time that Egil hosted Dr. Ron Malcolm of the U.S. Geological Survey. Together, they headed a team that isolated the Nordic Humic and Fulvic Acid Reference Materials now housed in the IHSS Standards and Reference Collection.

Retirement wasn't the end of Egil's work on natural organic matter in aquatic systems. From 1994-2001, he served as a lecturer and researcher in the Department of Chemistry at Agder College in Kristiansand, Norway, where he shared his vast knowledge of environmental chemistry and drinking water safety and hygiene with the students while supervising 2 Master's of Science degrees. During this time, he also led the team that isolated the Nordic NOM Reference sample for the IHSS Collection.

In 1996, Egil Gjessing was awarded the Norwegian Water Prize for his long-standing research on the "Color of Water", and in 1999, was elected to Honorary Member status by the organization that he help found, the IHSS.

Egil moved to Oslo in 2001, still not retired but as Professor Emeritus in the Department of Chemistry at the University of Oslo. There, he continues to lecture on environmental chemistry, and publish "old data" continually adding to his list of over 100 publications. He still exercises everyday, although he and Goya must settle for walks in downtown Oslo rather than romps in the hills and woods behind his home in Dyvik. Though Egil may tell you that the last move was to get closer to where he had begun his work on color in water, some of us feel that the real reason was to be closer to his two daughters and 6 grandchildren.

Egil is easy to pick out in a crowd. Not only for his physical stature, but for his quiet manner, infectious laugh and intense dedication he has always had for the subject of natural organic matter in aquatic systems and their importance for the ecosystem we humans inhabit. These features coupled with his ever-present willingness to help students and colleagues and easy-going nature, make him more than the sum of the parts. He is an honored and cherished colleague to many who are grateful for having him as a friend.

Jim Alberts