



A TRIBUTE TO REIDAR NYDAL

Reidar Nydal has a very good “pioneer spirit”, which influenced his work establishing the Radiological Dating Laboratory in Trondheim, Norway. He was often short of funding, but has tried to manage with the available resources. For example, much of the iron (10 tons) used to shield the proportional counters was from an old railway bridge. It was very important to find iron with low radioactivity, and this railway iron was made before radioactive isotopes were used in the production process. Also, much of the glassblowing needed during the establishment of the lab was done by Reidar himself.

Reidar was born on November 25, 1925 in Flora, north of Bergen, Norway. He was graduated from secondary school in 1946 and received his master’s degree from the university of Oslo in 1953. In 1968, he defended his Ph.D. (Dr. Philos) thesis at the university of Oslo on “An investigation of radiocarbon from nuclear tests”. Since 1953, he has worked with issues in radiocarbon dating, and took part in the establishment of the Radiological Dating Laboratory at the Norwegian Institute of Technology (NTH) at the University of Trondheim. He became head of the laboratory in 1960. His research has focused mainly on the development of conventional counting techniques for ^{14}C and the study of the carbon cycle in nature. His publications total more than 50 papers.

In 1986, he became professor at the Institute of Physics at NTH, and the contact with students, through teaching and guidance, has been, in his words “a valuable challenge during the last years.” His teaching has been concerned mainly with topics involving radiocarbon dating, the carbon cycle and climate. During his career, Reidar has guided 17 project and diploma students and 2 Dr. Ing. (Ph.D.) students. His teaching compendium, “Global Transport Processes in Nature”, has been selected since the middle of the 1980s by several students from all faculties of NTH.

Reidar started a study of ^{14}C from the distribution of nuclear tests in 1962. During the 1960s, he and his colleagues established 14 measuring stations for the lower atmosphere, from Madagascar in the

south to Svalbard in the north. Until recently, the two stations at Fruholmen at Nordkapp and at Izana in the Canary Islands were still operating. He also made agreements with the Wilh. Wilhelmsen and Fred Olsewn shipping companies to collect water samples from the sea surface during their cruises around the world. Thus, the laboratory was able to measure ^{14}C in the Atlantic, Pacific and Indian Oceans. During recent years, only one ship collected samples from selected positions in the world's oceans. In this way, he has covered the world with time series of ^{14}C measurements since the 1960s. From 1989 to 1994, this carbon monitoring of the world also included deepwater profiles, especially in the Nordic Sea (between Norway and Greenland), an important area owing to its deepwater formation. Reidar himself participated in six of these cruises, showing great commitment both in the laboratory and on the ocean, to see the measurements from start to finish.

These time series measurements from the air and sea have been of major international significance. Since the start of nuclear testing, ^{14}C concentration in the atmosphere has doubled. The excess was transferred into nature through the carbon cycle, and by studying the carbon time series for the different natural reservoirs, especially through modeling, we gain important knowledge about the carbon cycle. It meant a great deal to Reidar to be mentioned by Linus Pauling when the latter received the Nobel Peace Prize in 1963. This environmental knowledge is especially important in current discussions about the increase in the greenhouse effect because of increased CO_2 in the atmosphere.

The Radiological Dating Laboratory hosted the 12th International Radiocarbon Conference in Trondheim in 1985, with Reidar as chairman of the Organizing Committee. Reidar was honored by the King of Norway, when in 1995 he received the Gold Royal Order of Merit. A special symposium was also held in his honor when he turned 70.

Reidar has been married to Eva since 1954. They have a daughter and two sons, and seven grandchildren so far. He has enjoyed skiing and fishing with his family, and teaching the children and grandchildren about how to stay overnight in a snow cave. In his spare time he has been involved in many social activities. For about 25 years he was active as a leader for the Boy Scouts, and for many years has been involved in the Y's mens club, a subdivision of the YMCA. He has also been heavily engaged in social work for the church. Kayak-building and kayaking has been one of his greatest passions throughout the years. He has built three large and stable sailing kayaks with his own hands. In the largest, he traveled about 1500 km, from Bergen to Tromsø, during five summer vacations. His wife and oldest son joined him on some of the stages. His great knowledge of weather and wind, as well as his childhood in western Norway, were useful to him during these journeys. In recent years he has also been engaged in bicycling. He completed "the great strength race" (a bicycle race from Trondheim to Oslo, about 540 km) for the first time when he was 67 years old, in less than 24 hours. About three months before the race he used a "gear bicycle" for the first time.

Reidar is a person with a big heart; he wants people around him to be happy and feel well. He has an unceremonious manner, and he very easily gets to know new people. His concern about other human beings is serious, and he always tries to be very supportive. Reidar has now retired as head of the Radiological Dating Laboratory, but is still spending several hours at his office at NTH. He enjoys reading e-mail from friends around the world. He is still lecturing, and tries to publish the large amount of data and knowledge that he has.

Reidar was my supervisor from 1989 to 1994, through my project, diploma and Dr. Ing. (Ph.D.) studies. I would like to take this opportunity to thank him for his never-ending enthusiasm, discussions, ideas, encouragement and friendship during the years we spent together. I was honored to be asked to write this tribute article about him for this special issue of *RADIOCARBON*.

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