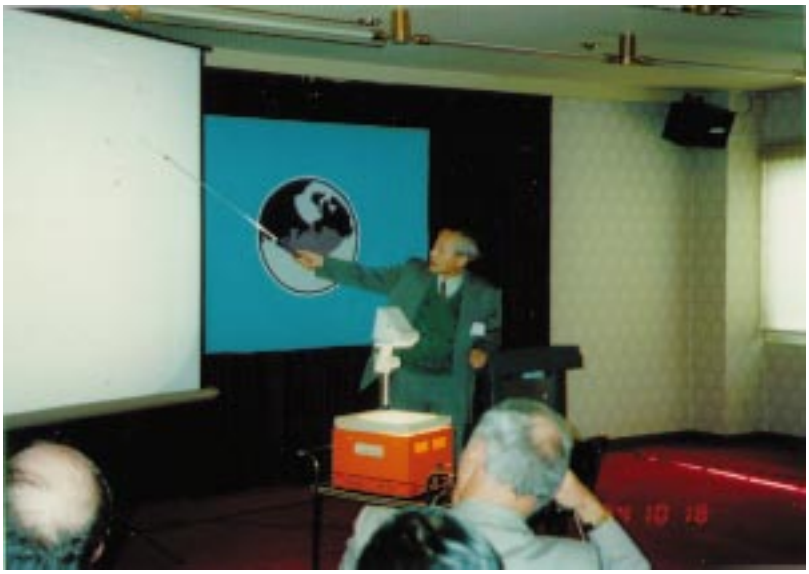
Yutaka Nagata Eulogy



Key note speech at Fourth PICES Annual Meeting, Nemuro, Oct. 1994.

Yutaka Nagata is a major figure in marine science. His research interests span a wide range of topics in physical oceanography. He has served as major advisor for a large number of graduate students who now are important contributors to oceanographic science in Japan. One of the major themes of his work has been to foster international cooperation in marine science. In PICES we are familiar with his many contributions to the success of the program through the leadership he provided as the first Chairman of the PICES Physical Oceanography and Climate Committee.

I (Bruce Taft) first met Nagata in 1966 at the Geophysical Institute of the University of Tokyo. I had gone to Japan, as a participant in the US-Japan Cooperative Science Program, to work with Prof. Kozo Yoshida on the description of the variability of the Kuroshio Current. Prof. Yoshida assigned me a space in Nagata's office and we began a long and very friendly association. Nagata was a lecturer at the Institute at the time. Even though we were working in very different aspects of oceanography, he was working on the physics of generation of wind waves and I on the large-scale meander of the Kuroshio, he was remarkably generous with his time in helping me to do my research.

Because Nagata was a young faculty member and had a lively and welcoming personality, his office was a natural gathering place for the graduate students at the University. As a result it was easy for me to socialize with the students and I made many friends in this group of young oceanographers. Today they occupy a prominent role in marine science in Japan.

He also undertook the role of being my cultural tutor. I had much to learn! My family and I are indebted to him and his wife Fumie for many memorable times in Tokyo. We were fortunate to be able to reciprocate when Nagata and his family came to La Jolla, California for a three-year stay at the Scripps Institution of Oceanography. At Scripps he worked with Charles Cox on techniques of measurement of oceanic thermohaline microstructure (1 cm vertical scale) - a field of study which he pursued vigorously on his return to Japan in 1969.

Nagata is a sea-going oceanographer who has impressive analysis skills. He has made fundamental contributions to our understanding of ocean waves, the significance of shallow-water temperature inversions, the dynamical role of microstructure in the ocean and the processes of formation and circulation of North Pacific Intermediate Water.

His DSc (1964) thesis was on the role of waves in determining nearshore sediment transport. In order to do this research he designed an electromagnetic current meter which could be used in the harsh environment of the breaker zone. By obtaining accurate measurements of the deformation of the wave velocity field he was able to demonstrate many aspects of the physical mechanism of sediment transport. In this work he also proposed methods of obtaining the directional wave spectrum from time series of horizontal components of wave velocity field.

Just one year old, Nov. 1934.

Graduate student (with hand-made electromagnetic current meters to measure deformation of orbital velocity of waves on shoaling beach), Faculty of Science, University of Tokyo, Aug. 1959.

He was the first Japanese oceanographer to undertake studies of ocean microstructure and this area of research probably encompasses his most notable achievements. This research included both laboratory modeling and field studies. Under his leadership a series of research cruises were carried out in the Kuroshio Front beginning in the East China Sea, extending to the region south of Honshu Island, and concluding in the Kuroshio Extension east of the Izu Ridge. These studies on mixing processes led to his consideration of the effects of mixing on the modification of Intermediate Water in the Kuroshio and subsequently in the southward intrusion of the Oyashio Current. These various studies culminated in 1994 with the publication by Nagata and seven Japanese and US colleagues of an influential paper on the formation of North Pacific Intermediate Water.

Nagata spent 43 years at the Geophysical Institute of the University of Tokyo. A volume of the Kaiyo Monthly was dedicated to Nagata at the time of his retirement (1994) from the University of Tokyo, listed 104 scientific publications, 14 books and a literary essay entitled Poet of Ocean and Mermaid. In this publication there are 34 contributed review papers; many of these papers were authored by students of Nagata. Many of these students now occupy prominent positions in oceanography in Japan and other Asian countries.

After retirement from his Professorship at the University of Tokyo in 1994, Nagata moved to the Mie University. where he was Professor in the Faculty of Bioresources. At Mie he did research on the biology of the spiny lobster. Starting in April 1997 Nagata assumed the position of Director of the Marine Information Center of the Japan Hydrographic Association. His work, in cooperation with the Japan Oceanographic Data Center, (JODC) will focus on marine data and information management in Japan.

Nagata was a leader in promoting the study of the global ocean circulation. In the mid-1980s a small group of oceanographers began work on the formulation of a global study of the large-scale, low-frequency variability of the full-depth ocean circulation. This study was termed the World Ocean Circulation Experiment (WOCE) and was conceived of as an internationally coordinated observational and modeling program. During the period of time when the World Ocean Circulation Experiment (WOCE) was being proposed to the world oceanographic community, Nagata worked tirelessly (seven years on the WOCE Scientific Steering Group) to convince the Japanese oceanography community that Japan should be a major participant in the program. In large measure as a result of his creative advocacy Japan became a major partner in WOCE and contributed significant resources to its observational and modeling programs in the Pacific Ocean.

In the office of Geophysical Institute; Associate Professor at University of Tokyo, 1970.

Aboard the R/V Tansei-maru, University of Tokyo, Sept. 1983.

At International WOCE Scientific Meeting, Paris, Nov. 1988.

Nagata was deeply involved in PICES from the beginning. In fact, since he took part in the 1991 Scientific Workshop held in Seattle, his participation predated the formal establishment of the program. At the first meeting of PICES in October 1992, he was elected Chairman of the Physical Oceanography and Climate (POC) Committee and he initiated a sequence of activities which became the POC agenda.

First, a Working Group on the Okhotsk Sea and Oyashio Region was established and reported its findings at the second PICES meeting (October 1993). The lengthy and authoritative report of this working group, edited by Lynne Talley and Nagata, was published in 1995. Its publication preceded the POC sponsored workshop on the Okhotsk Sea and Adjacent Regions held in Vladivostok in June 1995. The report of the Vladvistok meeting, edited by Nagata, Vyacheslav Lobanov and Lynne Talley, was published in 1996. These reports synthesized for the first time an enormous amount of information about this key region in the PICES area. At the 1992 POC meeting, a second Working Group on Modeling of the Subarctic Region was established and produced a report which was published in March 1996. At the conclusion of the work of the Modelling Working Group, a third Working Group on Circulation and Ventilation of the Japan/East Sea was established and is now working. Of course, this steady sequence of successful activities was the product of POC as a whole, but no one doubts that it was the inspiration and leadership of Nagata that brought it to pass.

From the beginning Nagata felt that it was essential that Russian scientists from the far east region be included in PICES and worked effectively to include them - even before Russia was officially a PICES member country. His ability to read Russian was of great help in communicating with the scientists working on PICES problems. He perceived that it would be advantageous to have a PICES meeting in Russia to develop good working relationships with Russian scientists with interests close to those of PICES. He proposed that a workshop be held in Vladvistok to complete the work of Working Group 1 on the Okhotsk Sea and Oyashio area. The workshop was attended by 144 people and was judged by many to be the most important symposium on physical oceanography and fisheries held in Vladivostok over the last decade.

Playing soft-ball game, 1984.

With wife Fumie, Pt. Rome, San-Diego, 1993.

Helicopter tour to Kamchatka with Dr. Makoto Kashiwai after PICES Okhotsk Sea Workshop in Vladivostok, June 1995.

The chairmanship of POC has passed to Paul LeBlond but Nagata is still very active in other aspects of PICES. He is co-chairman of the Implementation Panel of the Climate Change and Carrying Capacity project and with Vyacheslav Lobanov is preparing a multilingual glossary of place names in the Okhotsk Sea and adjacent regions.

Within Japan Nagata has been very successful in establishing close ties between scientists and the public-at-large. Of particular note is his active membership on the Nemuro Science Board which made it possible for PICES to hold a series of meetings in this friendly and attractive city. A number of his books were written to communicate the results of scientific research to the reading public.

In the Kaiyo Monthly honorary volume there are nine essays on friendships with Nagata. They express (unfortunately in Japanese for some of us) very well many of the characteristics that we in PICES have come to recognize in Nagata. His warm personality is photogenic as can be recognized in the accompanying photographs. His sense of humor and frankness make it possible for people on first meeting to feel at ease with him. Even though he is capable of telling a poor joke, his delivery is so colorful and engaging that everyone ends up smiling and laughing. He is unfailing in his consideration of the feelings of others and seemingly incapable of gratuitous critical remarks of others. Most of his colleagues are not aware that he is also a skilled athlete. He is an accomplished baseball pitcher and for many years was a manager of a successful sandlot team in Chiba Prefecture.

PICES has benefited greatly from his commitment to the program; we look forward to his continuing contributions in substance and style to the program.

This article is written by Dr. Bruce Taft (School of Oceanography, University of Washington, USA) with special input from Drs. Makoto Kashiwai (Hokkaido National Fisheries University, Japan), Vyacheslav Lobanov (Pacific Oceanological Institute, Russia) and Warren Wooster (School of Marine Affairs, University of Washington, USA) in appreciation and recognition of Dr. Yutaka Nagata's outstanding service to PICES over many years.