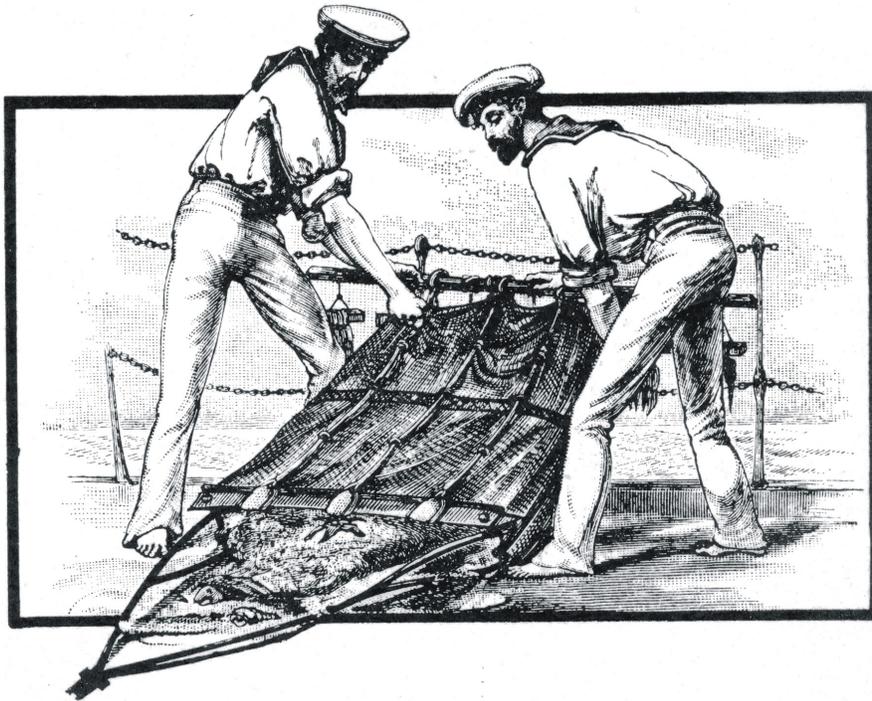


# International Marine Minerals Society



## **MOORE MEDAL** **2004/2005 CITATION**

The International Marine Minerals Society (IMMS) would like to present Dr. Michael J. Cruickshank with *The Moore Medal\**, which is given in the name of Professor J. Robert (Robby) Moore for distinction in the development of marine minerals. Professor Moore conducted marine minerals research at Cardiff University in Wales, Great Britain and the Universities of Harvard, Wisconsin, Alaska, and Texas in the United States. He was committed to the intelligent integration of government, industry, and academia to address the development of marine minerals.

Robby founded the Underwater Mining Institute and IMMS, and he committed his research and many other considerable personal efforts to the multidisciplinary development of marine minerals. *The Moore Medal* is not awarded on any regular basis, but is reserved for those rare occasions when the career of an eminent figure in marine mining and minerals activities warrants such an honor.

*\*Robert W. Cooke earns a living designing and making monumental sculptures for many customers, mostly in the Northwest. Before becoming a full time artist, Bob was the Exploration Manager for the International Nickel deep seabed mining consortium. He attended many UMIs and became a good friend of the Institute and many of its participants. He designed and made the Moore medal when IMMS decided to initiate the award.*

# International Marine Minerals Society

## *Michael J. Cruickshank*

Mike's first interest in mining was sparked in the Strath Taieri Valley on South Island, New Zealand at the age of 12. He was panning for gold in the Clutha River just downstream from a dredging operation. After returning to Scotland after World War II, and now having to think about the future, he pored over Government pamphlets on careers. The one on mining engineers caught his eye. Roughing it in the jungle, roughing it in the desert, roughing it in the mountains, seemed like the right fit for Mike, so he applied to and was accepted at the Camborne School of Mines in Cornwall, UK. For his early training he mined in Norway at the Orkla copper mine; in Cornwall at the old tin mines; then in Canada for gold at the Broulan Reef Mine in Timmins.

At graduation Mike was awarded the ACSM First Class and the Richard Pearce Gold Medal, and then immediately set to work as a mining engineer, working on the Greek island of Euboea and then as manager of the Muirshiel Barytes Mine at Lochwinnoch a small underground operation just 30 miles from his home town in Glasgow. During this period he also served in the Royal Marine Forces Volunteer Reserve for Scotland, and was an officer in command of a vessel in their Special Boats Section, the UK counterpart to the US Navy Seals. Thus began his professional interest in the oceans that was to take him from the cold black waters of the River Clyde to marine environments around the world.

Not content to remain in Scotland as a successful mining engineer, Michael applied for and received a fellowship to study for a master's degree at the Colorado School of Mines in Golden. Mike had read an article in *The Times* of London that discussed the possibility of mining some strange seabed nodules containing manganese and nickel, and cited the name of a graduate student, John Mero, at the University of California at Berkeley, who was studying them. In this way Mero gave Mike the inspiration that was to guide him to this day. He corresponded with Mero extensively while they both worked on their graduate degrees. Mike settled on a thesis titled "*The Exploration and Exploitation of Undersea Minerals*," and he completed in 1961 as part of his requirements for his MS degree at Golden a synthesis of the global knowledge of marine minerals.

Mero's work at Berkeley and Mike's work at Golden caused a bit of a stir in the mining community. International Nickel and Richfield Oil Corporation both offered assistance and fellowships to Mike when he applied to Berkeley for graduate studies. There at the Hearst Mining School he shared an office with John, and the two began a professional relationship that was to last until John's death a few years ago. During the next fifteen years after graduating from the Colorado School of Mines, Mike worked at several jobs, all devoted to marine minerals research. These included positions at Scripps Institution of Oceanography, the University of Alaska, Lockheed Missiles and Space Company, and just up the coast from here at the US Geological Survey, Menlo Park where he was awarded a Sloan Fellowship for a year at the Stanford University Graduate School of Business.

Mike took a break from these pursuits in the early 1970s to complete his doctorate degree at the University of Wisconsin, Madison, where he met caught the marine minerals bug from Robby Moore in much the same way as Mike had caught it from John Mero.

After getting his PhD, Mike worked for the United Nations Development Program on their Offshore Exploration for Tin in Burma and Thailand and was then appointed for two years as visiting Professor of Mining at the Henry Krumb School of Mines at Columbia University. He later returned to the Department of the Interior and retired from there in 1987. After consulting for a year, he was appointed to the University of Hawai'i, Marine Minerals Technology Center (MMTC) as Technical Director, where he remained until his second retirement in 1999. Currently, Mike continues to keep in touch with the marine minerals field by maintaining involvement with the Offshore Technology Conference, Society of Mining Engineers Program Subcommittee, and others.

His 53 years of professional involvement in mining and marine mining development include eleven years with the minerals industry, nineteen years in academia, fourteen years with government, and nine years as a technical consultant. His accomplishments include numerous developments of tin, copper, gold, barite, magnesite, alluvial ores, sands, gravels and deep seabed deposits. He has published more than 250 papers, book chapters, and technical articles on marine minerals. He was for many years the bi-monthly contributor of the Marine Mining column for *Sea Technology* and is currently the Editor-in-Chief for the journal *Marine Georesources and Geotechnology*. He is a true pioneer in the field and as such clearly deserves our acknowledgement as this year's recipient of the Moore Medal.

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Peter Herzig, President

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Charles L. Morgan, UMI Chair

