A serious attempt to learn how marine animals live at sea began 50 years ago when the first time/depth recorders (TDR) were attached to Weddell seals. Even now, with the huge advancements in marine recording and tracking technology, only a few species are suitable for advanced applications. The attachment of the first TDRs took place at McMurdo Sound (Antarctica), one of the most remote habitats in the world. I will give a personal account of the history of studying marine mammals and emperor penguins in the wild, including the 1973 Alpha Helix expedition where I had the privilege meet Kjell Johansen and other comparative physiologist luminaries. It was wonderful to experience how Kjell conducted his investigations, and as one of the editors of the Zoophysiology Series, he later invited me to write a book on diving physiology. That effort had a powerful intellectual influence on me, and as many others, I remain indebted to Kjell’s encouragement.