

Obituary

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Robert Thayer Wilce, pioneer of Arctic marine botany (9 December 1924–26 February 2022)

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Robert “Bob” Thayer Wilce was born in Carbondale, Pennsylvania, on 9 December, 1924. He grew up hunting and fishing in the woods and went to school in Carbondale. He was not academically inclined. In 1941, when he was 17 years old, he took one month of Latin and then quit – he never took any French in school (only many years later in college). He worked in a slaughterhouse and then at a gas station for his first regular income.

In early 1944 with the war in full swing, he volunteered for the paratroopers of the U.S. Army. He was the only survivor on an American truck that ran over a German mine near Bastogne, and was shipped back to the USA on a stretcher. Being eligible for the GI Bill, and uncertain of ever regaining the use of his legs, Bob decided to enrol in college. Since he didn’t want to go far away from home, he went to the nearest university, which was the University of Scranton, and it was all a new type of world for Bob. He spent four years at Scranton, graduating with a BS in 1950. In January 1951 he entered the University of Vermont at Burlington VT, where he got a Masters degree with Fred Taylor in wood anatomy on the secondary xylem of seven species of *Acer*.

In the summer of 1952, Bob took a course in phycology at Woods Hole. W. Randolph Taylor was the advisor. Bob applied for the graduate program of the University of Michigan at Ann Arbor, and he was accepted. In parallel, he was accepted for the graduate program in palaeobotany at Cornell. The choice was between studying fossil Devonian vascular plants or living algae. Bob decided to accept the offer from Michigan, where he studied with Taylor, earning his PhD in 1957, and where he first became exposed to Arctic phycology. His thesis committee also

included Frederic Kroeber Sparrow, Chester Arnold, Harley H. Bartlett (who gave Bob his first ever research money out of his own pocket, \$25), M.V. McVaugh, Pierre Dansereau and an ecologist whose name he couldn’t remember. The interaction with Sparrow was probably his first exposure to algal pathogens. At Ann Arbor, he took a course in ecology, palaeobotany and Taylor’s algal course and published his first paper (a new species of *Vaucheria* from the mouth of the Koksoak River in Labrador, Blum and Wilce 1958). During this era, in 1954, he first travelled to the Arctic, when he joined the expedition of fish physiologist Peter Scholander. The ship used, the *Blue Dolphin*, belonged to a Dartmouth College professor, David C. Nutt. The expedition went from Casco Bay, Maine, in 1955 – Bob met them in Red Bay, Labrador. He had the marvellous experience of going north on a sailing ship. During the first expedition, dredging was done from the *Blue Dolphin* or from the shore. At the end of the expedition, he decided to join a Canadian Coastguard vessel exploring Ungava Bay.

Bob did his best, when, the next August, he met the skipper of a Coast Guard Ship who took him from Hebron to Saglek to Nakpak, all the way round to Killiniq Island, Port Burwell, where they found three Inuit families. “I don’t know when that thought came to me, it wasn’t until after we left Port Burwell and we went to Chimo [Kuujuuaq], at the base of Ungava Bay”, where he stayed until October with Moravian missionaries.

With money from the Arctic Institute of North America (AINA), he went back by himself the next year, and he spent 3 months with these three families. Everything in Ungava Bay was iced up solid in late April. In Chimo, a Mountie took Bob under his protection, and took him on a trip up the Koksoak River taking flour sugar, tea and lard to the Naskapi Indians living there. Sometime after he got back to Chimo, the ice started breaking, and he found a ship going up north to a place some 50 miles south of where he wanted to go. He gave them an extra \$50 to take him to Port Burwell – he couldn’t speak with them, didn’t know any of their language, but they knew where the three families would be, who would come for hunting seals. While he was waiting for them to take him to the next place,

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Figure 1: Scenes from the life of Robert T. Wilce.

(A–E) Expeditions to the Arctic. (A) Bob and graduate student examining samples obtained with a dredge. (B) An iconic photo of Bob on one of his later expeditions, probably in his 60s. (F) These are the hand-made probes Bob used in his microscopy. The handles are pieces of hardwood (possibly maple or chestnut), carved by Bob (and now smooth with years of wear) and tipped with very sharp needles. (G) Bob's office and lab just after his passing, undisturbed since the last time he was there. (H) Bob and his cat Sammy in January 2020. (I) The author's final farewell from Bob Wilce on 11 December, 2021. Photos courtesy of Alexander Wilce, Susquehanna University, Selingsgrove PA, USA.

he saw “all this beautiful *Laminaria longicuris* – jumped on an ice floe, drifting down Maclain Strait “ – but he brought that kelp back, which is now in the herbarium! That was his first specimen. He felt quite guilty – he had no food and depended on his shipmates: three men, one young woman and Bob, in an open boat. Along the way they would shoot seal, eating it raw or boiled. They got to Port Burwell and he had seen the preceding year that the Canadian Government had set up a cod fishing research station hut and that was where he would sleep. Bob had 50 lb of flour, collected lots of plants, including *L. solidungula* off the coast of Labrador in deep water, and surprisingly, he found a cave, and way back in the cave, he found *L. solidungula* in the intertidal because it was sheltered from light – which is a critical factor. Robert G.

Hooper in southern Newfoundland (where they dived together) later showed him this species in 100 ft of water.

While in graduate school, Bob met his first wife, Joan Hubbell, also a graduate student in Botany. They were married in 1957. She was very interested in Arctic flora, which contributed to a good match. They had two sons, Alexander (* March 11, 1961) and Andrew Thayer (“A.T.”, * March 4, 1963 – March 22, 2020). It is unlikely that he would have gone to Europe or started the momentum of success without her. She was a biologist, and helped him back to work, night after night.

Reflecting on the period of his graduate studies, Bob had mixed feelings. “(...) just by serendipity, I had no luck in getting a job but I did have luck in getting money to travel to Europe.” – referring to a University of Michigan

post-doctoral fellowship and AINA grant to study at Uppsala University in Sweden as a postdoc (1958–1959). Following work as an instructor in the Department of Botany of the University of Michigan (1957–1958), he travelled to Europe (funded by the Arctic Institute, later by the Guggenheim Foundation). He arrived in Le Havre in the autumn, had a wonderful road trip up through France, Belgium and Germany into Denmark and Sweden, and ultimately to Uppsala. “Knocked on the door. I had written to Mats Waern that I had much interest but many problems with brown crusts. I never got a reply – [he] didn’t write letters. I said to my wife – I am going to see Mats Waern. I saw his critical papers and doctoral thesis: unmatched. I went to Uppsala, got his address, knocked on his door. ‘I am Bob Wilce!’ – ‘You are here!’ And he put his arm around me, and it never stopped, and I spent months there, went to West Coast of Sweden, Kristineberg in January for dredging.” Mats gave him the initiative and general scope to continue the Arctic work (“Find out what the Arctic flora is – there is no knowledge of it.”), which was so critical for Bob’s work. Mats Waern was a master of dredging, and had a blacksmith make Bob a dredge according to his specifications, originally for the trip to Kristineberg, which Bob then used for every trip until 1965 when he started SCUBA diving.

On another expedition, Bob lived on Devon Island for 3 ½ months – he had been promised a boat with a motor, and the Head of AINA flew north with them to the lab on Devon Island. The preceding autumn, a boat with an inboard motor was to be left there for Bob. But it was tied up – which sunk the boat! A cargo canoe was shipped in as a replacement. Bob was convinced that was the way to do it until he saw the capabilities of SCUBA. Bob also conducted expeditions to Greenland; places visited included Godhavn to Thule Air Force Base via Sanderstrom. He stayed in Thule a few nights, then spent July–September in Qaanaaq. Bob extensively explored the Canadian Archipelago from Labrador to Baffin Island and Ellesmere Island. He conducted a 2-season trip to the north coast of Alaska – to the area of Prudhoe Bay and Barrow – with Robert Lee (who had divers working for him). Bob took two men to Prince Patrick Island, which was not much of a collecting trip because of ice. He worked with all of Rosenvinge’s and Søren Lund’s materials, including from the Daneberg Station.

In the Arctic (Figure 1 A–E), he had ample interaction with Inuit. On his second trip, Bob realized that wading around was really cold. An Inuit man on Killiniq Island told his wife to make him a pair of boots. She made two pairs! Every night they had to be rubbed with oil and were suitable for wading in shallow water. They had no grip – they

were wet skin on rock! Bob never had a problem with polar bears himself, even though he has been in a situation where a man was killed by a polar bear in Bylot Island. He later looked at such experience with great trepidation. He refused to carry a rifle, which he considered cumbersome. He was so fascinated with algae that he put polar bears out of mind. A bear, a female with cubs, walked into camp in Bay 11, 1984, the day of Bob’s last dive. The expedition team included Lanny Miller, Bob’s grad student, and Poul Moller Pedersen from Copenhagen, who was with him in the tent. The Inuit shot rifles and scared the bear away. Bob knew it would be alright.

From July 1965 until January 1966, Bob overwintered in Disko Island, Greenland – taking his wife Joan and their young children, along with his graduate student, Jeff Prince (who died in 2018). Bob started SCUBA diving in the Arctic in 1965. He and Prince put the tank on in late August or early September – and descended into a deep tide pool – using wetsuits!

Returning to the USA, Bob found an appointment at the University of Massachusetts, Amherst (as Instructor, 1959–1960, and subsequently as Assistant Professor, 1960–1968). He held further temporary appointments as Instructor at the Marine Biological Laboratory, Woods Hole, MA (summer 1968) and as Instructor at the marine lab of the University of Delaware in Lewes, DL (summers 1975–1977). He was promoted to Associate Professor at the University of Massachusetts (1968–1975), and to Professor (1975–1990). He became Professor Emeritus in 1994, dedicating himself to full-time research.

His professional awards include a Lincoln Ellsworth fellowship (AINA; 1958–1959) for postdoctoral research in Sweden, an appointment to the Horace Rackham Graduate School, University of Michigan (1958–1959), a John Simon Guggenheim Fellowship (1965–1966), a Fulbright-Hayes Research Abroad Fellowship for a sabbatical in Concepción, Chile (1970–1971), and an Honorary Doctor of Science, University of Copenhagen (16 Nov 1998), presented by the Queen of Denmark. Bob had another sabbatical in Chile in 1985, at the end of which he drove back to Amherst MA in the USA Concepción. After a seminar in Gothenburg, Bob was invited to the German-Italian Nuclear Energy Lab at Fiascherino, south of Pisa (which had a cold chamber suitable for Bob’s work for cultures from northern Greenland), where he worked with Jeff Prince in 1968. Bob was also among the founders of the Northeast Algal Society (NEAS).

Bob and Joan divorced, amicably, in 1985. A few years later, Bob met his second wife, Joanne Parker (1936–2020), a former restaurant owner and also a divorcee, then studying at nearby Smith College on an Ada Comstock

scholarship for older students. They were married in 1990. In 1996, Bob and Joanne sold their house in Leverett and built a new house closer to the University, where they lived happily for over 20 years. Her daughter, Donna Parker, became very close with Bob, and cared for him during the last two years of his life.

After retirement, Bob relinquished his laboratory space at UMass Amherst, but was given a small office and lab in which to continue his work (Figure 1 F,G). He maintained his scientific productivity until the very end of his life, publishing papers well into his 90s. After the outbreak of the COVID-19 pandemic in March 2020, Bob was largely confined to his apartment, supported by his daughter-in-law Donna Parker, but even so, despite a weakening heart, continued to work as his energy allowed (Figure 1 H,I). He passed away suddenly, probably from heart failure, on the morning 26 February, 2022, not quite three months after his 97th birthday (for which I was fortunate enough to visit him in December 2021 - which also enabled completing the fact-finding for this article). Bob will be remembered for being one of the first scientists to work in the Arctic region of North America. The best review of his legacy is probably “The Arctic Stamp” (Wilce 2016). A milestone for the conclusion of his career was also the Baffin Island flora (Küpper et al. 2016).

The author’s interaction with R.T. Wilce started around 2005. At that time, I, working at the Scottish Association for Marine Science (SAMS) in Oban, Argyll, had provided advice about the oomycete pathogen of seaweeds, *Eurychasma*, to a student from UMass Amherst. I then received a Thank you email from her supervisor, Bob Wilce – who also wrote that, about 44 years earlier in 1962, he had loaned some valuable *Fucus* herbarium specimens to a phycologist in Oban, Harry Powell – which the latter had never returned ... It turned out that Harry lived in my neighbourhood in the village of Connel. I contacted him – and about two days later, Harry showed up in my office at SAMS with a box of seaweed specimens, which he had rescued just before a clear-out of a storage hall. I decided not to mail them back to Bob, but to visit him in person on the back of a trip to the Gordon Research Conference Environmental Bioinorganic Chemistry in New Hampshire in June 2006. When we first met at the UMass bus stop, the first thing that Bob said was “46 years is too long to be angry”. We spent two days together in Amherst and then Nahant, where we collected the planktonic *Pylaiella* which Bob had described in the 1980s. I flew back to Scotland – and soon received another email from Bob: the most important specimens were missing from the box returned by Harry! I prompted Harry to search once more – and he showed up with

another box from his attic. I took no chances and returned these specimens to Bob again in person during a very memorable visit to Amherst in Nov. 2006 – where we started discussing Arctic seaweeds. This inspired me, and I subsequently organized my 2009 expedition to Baffin Island (Küpper et al. 2016). The rest is history ...

This biography is based upon my interviews with Bob during three visits to Massachusetts in April and October 2018 and December 2021. Very fittingly with the legacy of Bob Wilce, this text was concluded in flight high above the Canadian Arctic on 30 March 2022.

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