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RICHARD P. GOLDTHWAIT

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There is a great deal to say about Dick Goldthwait—more than I know. I am indebted, therefore, to Sidney E. White, from whose remarks about Dick in the *Journal of Arctic and Alpine Research*, I have drawn extensively.

Richard Parker Goldthwait was born in the spring of 1911 in Hanover, New Hampshire. White says of the fact that he grew up on the esker known as Occum Ridge, that he thereby seemed foreordained to become a glacial geologist. What he failed to note, however, is that it would be difficult indeed to be born anywhere in northern New Hampshire without being able to claim a similar destiny. In any case, Dick certainly did become a glacial geologist, as well as a glaciologist, a geomorphologist, a Pleistocene stratigrapher, and a Quaternary geologist.

In 1992, in remarks which he made to the members of the Mount Washington Observatory, Dick described what it was like to grow up on that infamous esker. His father, James, was a professor of geology at Dartmouth, well-known for his own work in the White Mountains, so it is no surprise that he and his brother, Lawrence, were exposed to an unrelenting barrage of things geological. Not only were they the recipients of their father's impromptu lessons on the subject, they were also exposed to the presence and conversation of a parade of geologists who seemed constantly to be ensconced in the family home. No less a visitor than Ernst Antevs, was familiarly referred to as "Dr. Ant-Eggs".

In those days, Dick always seemed to be occupied on one project or another, a reputation that he continued to earn throughout his life, and that is exemplified by the early criticism that he habitually had one more thing to do before supper.

Not surprisingly, Dick did his undergraduate work in geology at Dartmouth, and took his M.S. there as well. He earned his Ph.D. in 1939 at Harvard. It was in the work associated with his doctoral thesis that he discovered glacial till on the summit of Mount Washington, and found glacial striations on the headwall of Tuckerman Ravine that he reported as evidence of insignificant local cirque glaciation after the retreat of overriding continental ice. The latter assertion was somewhat controversial at the time, and has sparked more than one lively debate since.

Dick was never to lose his love for the White Mountains or his professional interest in them, and he returned many times throughout his life, among other things to map and measure patterned ground features and their movement.

In 1937, he married Kay Burnham, whose first effort on his behalf had been to paint a series of views of the Presidential Range in various stages of glaciation for his dissertation. She also knew the mountains well, having tramped them by his side many times.

After obtaining his doctorate, Dick taught at Harvard and Brown University, and became a Technical Consultant in the USAAF in 1943. The Air Force sent him to Wright Field in Ohio, where, as a Lieutenant Colonel, he worked as a Materials Engineer. He stayed in Ohio after the war to begin his long career with Ohio State University, where he became Professor Emeritus in 1977.

His accomplishments as a teacher and a field researcher were many. Early on, he estimated the age of Native American shell heaps along the Maine coast, and in 1941 helped to map the glacial deposits of southwestern Cape Cod. In 1950, he was part of an expedition studying the Barnes Ice Cap on Baffin Island. In the fifties, he mounted a series of Ohio State University expeditions to near Thule to determine the recent history of the northwest edge of the Greenland Ice Cap. In the sixties and seventies, he renewed a long term interest in the great glaciers of southeast Alaska, where he had worked in 1934, and supervised a spate of graduate research.

It is said that so much data flowed back from the Greenland work, that a data reduction center was established at Ohio State, which eventually became the Institute of Polar Studies. As Director of the Institute for its first five years, Dick planned, supported, and directed polar and alpine studies in Alaska, Greenland, New Zealand and Antarctica, and encouraged fellow scientists to come to OSU for the purpose of sharing their knowledge and publishing their work.

He determined the rate of ice advance and retreat across Ohio and developed a chronology for the late Pleistocene glaciation in that state. He, and members of his department's Geology Club, studied the now famous glacial grooves on Kelley's

* Guy Gosselin was Executive Director of the Mount Washington Observatory at the time of the 1993 Glaciology Symposium. This introduction is adapted from his remarks made on that occasion.

Island in Lake Erie. In Antarctica, he supervised teams of international scientists studying glacial geology, stratigraphy, vertebrate and plant fossils, and vegetation and lichenology.

His association with professional groups encompassed all that were appropriate for one brought up on an esker, and extended beyond that to The Friends of the Pleistocene, an organization that was as mystifying to the uninitiated as it was probably supposed to be.

In the course of all this activity, he presided over the work of no less than 17 graduate degrees. The awards he received are too numerous to list here, but it is likely that the greatest, to him, may have been a photo album made up of pictures sent in by former students to honor his retirement. The photographs showed him as his students had known him: leading field trips, talking, using a bullhorn, digging into till, crossing a stream barefooted, dripping after having fallen into a lake, eating lunch, or flat on his back asleep.

During the summer of 1992, Dick and Lawrence and their families were, as usual, at their summer homes on the shores of Lake Wentworth near Wolfeboro, New Hampshire. On the morning of July 6, while the two brothers were in a boat collecting water samples for a continuing pollution study of the lake, Dick suffered a sudden, massive cerebral hemorrhage, and died a day later. Sidney White observes that Dick had, as he had always had throughout his busy life, one more project to finish, if only he could have found the time for it.

The Mount Washington Observatory is proud to have supported the preparation of this special issue of *Géographie physique et Quaternaire* in honor of Richard Goldthwait, not only because we recognize the importance of this volume to White Mountain geologic research, but also because the association of Dick and his wife, Kay, with the Observatory has been a long one. The Observatory's News Bulletin was one of the first publications for which Dick wrote, describing the excavation that uncovered the summit till. Before that, his father James played an instrumental role in starting the Observatory when, as President of the New Hampshire Academy of Science in 1932, he turned over to Joe Dodge that organization's entire treasury balance amounting to \$400.00. Supportive of the Observatory's efforts to accumulate material pertinent to the White Mountains within the White Mountains, and ever mindful of the need for researchers to have reference material at hand, he diverted important books and stereographs to our collection, and eventually made available to us a complete set of monographs and reference items dealing with the geology of the White Mountains. The Goldthwait Collection was added to by brother Lawrence and by Kay, herself, who gave us one of the aforementioned watercolors she had crafted long ago.

The Goldthwaits were recently referred to by a radio talk show host as the "Leakeys of White Mountain geology". He made the comment facetiously after hearing a few facts about the family (Dick's son, Tom, for example, also did glaciological research in the White Mountains) but he was not far from the truth after all.

I remember my first meeting with Dick Goldthwait very well. It occurred in 1971 at the claybanks along the Peabody River south of Gorham. I was an interested amateur who had been inspired to imagine what it must have been like in that area when the sun finally began to release the tons of water that had been locked in the ice for millennia. "It's all here," one geologist had said to me with an easy sweep of his hand across the valley, indicating that the evidence was there for all to see, "All the answers are here." By god, I thought, completely taken in by the gesture, I'm going to have a look at this!

Though I had never met Dick before, I had heard about him, and somehow knew it was him when he was still a tiny figure stepping surely and unhurriedly from rock to rock as he crossed the river. Watching him approach, I was suddenly very conscious of all my half-baked suppositions about that particular corner of the Pleistocene, and began to wish fervently that I would have the wit not to mention any of them. As it turned out, I was able to hold my tongue, and found confirmation in his expression as he gazed at the banks that the answers were indeed all there, and that if God had the patience, I might get to some of them too.