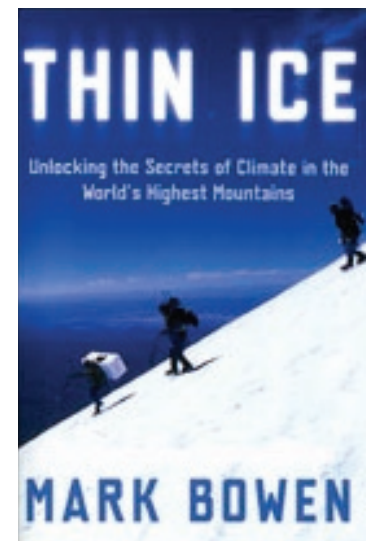


urgent signals from a frozen world

LOCAL AUTHOR MARK BOWEN FOLLOWS RENEGADE SCIENTIST LONNIE THOMPSON INTO THE CRYOSPHERE



Left: View from the summit as Sajama's shadow meets the horizon, at dusk. (©2005 Mark Bowen) Source: www.markbowen.com. Above: Bowen's book.

By Laurie Atwater

Mark Bowen began his relationship with paleoclimatologist Lonnie Thompson on the top of the highest mountain in Bolivia.

It was a serendipitous ordering of people, events and skills that brought Bowen from the comfort of Arlington Massachusetts to the summit of Nevado Sajama 21,500 feet into the clouds. It was also the beginning of a journey with Thompson that would take Bowen on several ensuing expeditions and would lead to his book *Thin Ice: Unlocking the secrets of Climate in the World's Highest Mountains*.

Lonnie Thompson is a Professor of Geological Sciences at Ohio State University and director of the Ice Core Paleoclimate Research Group at the Byrd Polar Research Center. He is known for his groundbreaking research into tropical and semi tropical glaciers and has conducted research that has forever altered scientific thought on climate change. He may be best known for his revelation that the snows on the top of Mt. Kilimanjaro are receding and will disappear within twenty years.

On January 22nd at 7:30 pm, Lexington's Global Warming Action Coalition (GWAC) will present a talk by avid climber, writer and scientist Mark Bowen at Cary Hall. Bowen will discuss his expeditions with Thompson and the startling information that Thompson and his team

has discovered in ice core samples that they have excavated from the highest mountains in over 15 countries. Bowen promises lots of astonishing pictures at his Lexington talk and is sure to entertain the audience with his storytelling

When we talked by phone recently, I was really interested in what led Bowen, a New York native and MIT educated Doctor of Physics to the top of Mount Sajama to meet with Lonnie Thompson.

OUT OF THE BLUE

"I got a call out of nowhere," he explains. The call was from an editor at *Natural History Magazine*. How had *Natural History* gotten his name? It turns out that "they were up a creek" Bowen says. After staging an elaborate story on Lonnie Thompson, the writer that they had hired pulled out of the project at the last minute because she was not an experienced climber. The project required a high altitude climb. *Natural History* turned to *Climbing* magazine for ideas assistance and they ultimately reached Bowen's editor who is also a climbing buddy and friend.

Bowen, an avid climber, was just finishing up a story on a trip to Carstensz Pyramid on the island of New Guinea and his editor knew that he had a scientific background. Perfect.

Sunday, Jan. 22,
7:30 p.m.
"Thin Ice -
Unlocking the Secrets
of Climate in the
World's Highest
Mountains"
Dr. Mark Bowen,
Cary Hall

"That was a confluence of the three major interests in my life: science, climbing and writing," says Bowen. "Five days later I'm in Bolivia and a week after that I'm meeting Lonnie Thompson on the top of the highest mountain in Bolivia!"

THE THRILL OF THE CHASE

Bowen is an engaging guy. I immediately spark to his genial spirit, his conversational enthusiasm and his openness. No yet infected by the bug of brevity, the wariness of those who have taken too many interviews, Bowen is game for a wide-ranging and entertaining conversation. I start out by asking him if he was always a science guy and I was surprised right off the bat.



My companions, Manuel and Javier, on the morning after our coca-, Coca Cola-, and coffee-laced, all-night drive across the Altiplano from La Paz to Sajama. The twin Las Payachatas float in the sky, across the border in Chile. (©2005 Mark Bowen) Source: www.markbowen.com.

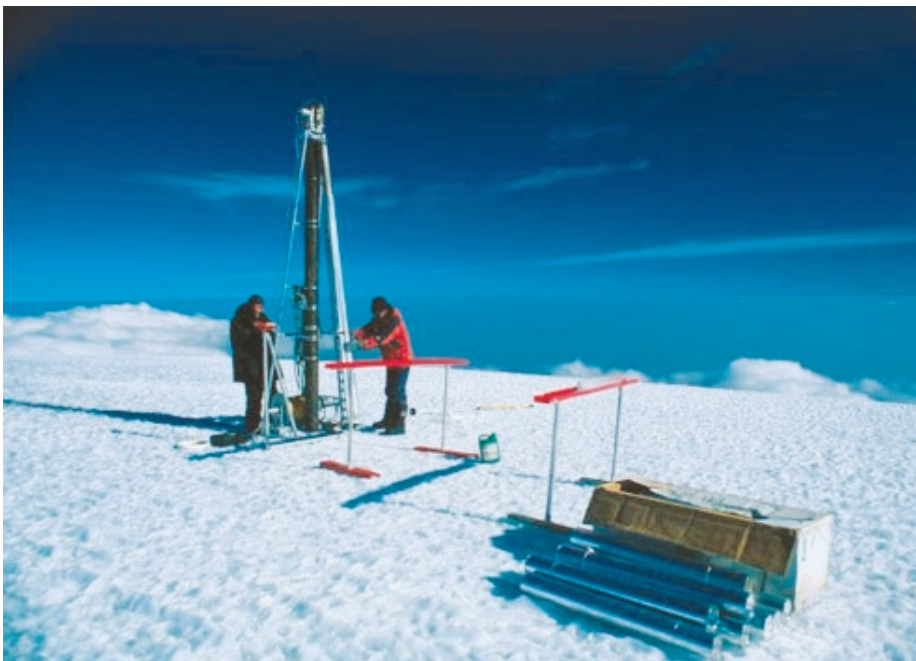
"Not really," he answered matter-of-factly.

In fact, he was a theater kid. "I starred in all the plays," he says. "I never had any interest in science at all."

After high school Bowen took the road less traveled—choosing to work and travel long before the "gap year" was a fad. He had a self-admitted "great intellect thirst" and an adventurous spirit. He took writing courses at The New School for Social Research. He read constantly, and for almost five



Retreating snow in the summit crater of Kilimanjaro, as of February 2000. "This is the way a glacier dies." (©2005 Mark Bowen) Source: www.markbowen.com.



Victor Zagorodnov and Vladimir Mikhaleiko drilling on Kilimanjaro's southern ice field, about a hundred yards from the very summit, near the end of the 2000 expedition on which six cores were drilled to bedrock on the three largest remaining fragments of the "Snows of Kilimanjaro". The "inversion layer" of dust, smoke, and haze from below marks the horizon. (©2005 Mark Bowen) Source: www.markbowen.com.

years he experienced life. "I did a lot of odd jobs—I raked blueberries in Maine, I worked construction, I did a lot of traveling around North America...I went to Alaska," he says.

His youthful enthusiasm and curiosity led him in many directions intellectually, but HE decided that he couldn't teach himself science and he wanted to learn more. He found his way to Columbia and began taking physics courses. Soon he transferred to MIT.

At MIT he discovered the aspect of science that would captivate his imagination—research—and what he calls "the thrill of the chase."

Bowen took advantage of MIT's UROP program (Undergraduate Research Opportunity Program). UROP creates research partnerships between MIT undergraduates and faculty and was one of the first programs of its kind in the country. UROP celebrates the idea of "learning by



Lexington Global Warming Action Coalition

Lexington GWAC has been formed as an outgrowth of last year's successful Lexington Reads program which featured "The Future of Life," by Lexington's own Edward O. Wilson.

Lexington GWAC's mission is to educate and to raise awareness about global warming and climate change, as well as to promote actions that we can take both as individual citizens and as a community to reduce greenhouse gas emissions and develop sustainable practices.

Activities sponsored by Lexington GWAC will include a lecture series on topics related to global warming and climate change. The first of these events took place on Oct. 16 with a talk by Dr. Ted McIntyre entitled, "Global Warming Demystified," and the second on Nov. 5 with Matt Palmer from Clean Energy Now, who spoke on the subject entitled, "Wind Power and the Nantucket Sound Wind Farm." Videos of both talks can be borrowed from the library.

A monthly film series is also being planned to complement the lecture series. Screenings will be held at the Cary Memorial Library. The first film entitled "Global Warming: The Signs and the Science," scheduled for 7 p.m. on Jan. 17, takes viewers across America to meet people from every walk of life using their words and stories to uncover the reality of climate change as experienced in this country. See our Web site (<http://www.lexgwac.org/>) where listings of these and other current and future activities may be found along with additional information.

In addition to the lecture and film series, Lexington GWAC will also be engaged in ongoing efforts to distribute information and promote actions that we as individuals and as a town can take to reduce our community's greenhouse gas emissions. The Cary Memorial Library is currently featuring an informational display created by Lexington GWAC on the subject of climate change and global warming.

To learn more about Lexington GWAC or to get involved in GWAC's activities, visit the Lexington GWAC Web site. Watch this space in coming weeks for facts and ideas that you can use to address the challenge of global warming and climate change.

Lexington Global Warming Action Coalition: www.lexgwac.org

Schedule for future lectures:

Thursday, Feb. 9, 7 p.m.

Green Roundtable Presentation: Sustainable Design & Construction, Cary Library

Thursday, March 16, 7 p.m.

"Gardening in a Warmer Climate," a talk by Teri Dunn, gardening author, Cary Library

Sunday, April 30, 7:30 p.m.

"The Global Warming Crisis and the Importance of Action at the Local, State and Regional Level" with Seth Kaplan from Conservation Law Foundation, in connection with Earth Day.

FROM THE ARCHIVES



and fellow outdoorsman Bill McKibben (everyone may remember McKibben from his Lexington appearance last year) who called it “one of the best books yet published on climate change” in a recent New York Times book review. (“The Coming Meltdown.” *The New York Times Review of Books*, January 12, 2006).

Bowen is both entertainer and educator in this book. It is rich with detail that will appeal to climbers as well as detailed cultural observations and descriptions that will appeal to lovers of a travelogue.

“There are just so many stories,” Bowen exclaims. The book is really about Lonnie Thompson, but it is also about real science as a quest and what science is—and what the working life of a scientist is like. Of course, the underlying thing that comes through is that it ultimately has to be about global warming because that’s the most important issue in Lonnie’s work.”

Bowen did not begin this process with a formed opinion on global warming.

“I was somewhat of a skeptic,” he admits. No more. After accompanying Thompson on several of his journeys, he is a believer. “It is a moral imperative for people to understand this and be able to do something about it,” he says.

Bowen took copious notes while on Sajama with Thompson and observed the “well choreographed” process of extracting ice samples a meter at a time. Over the years, Thompson along with Bruce Koci (who actually designed the drill) have perfected a method for extracting the ices, storing it in plastic and metal tubes and keeping it cold to preserve its integrity on its trip back to Thompson’s lab. “It is never touched by human hands,” Bowen explains. “Only rubber gloves.”

Thompson sketches each sample after it comes up so that he can be sure to assemble them properly back in the lab. He also looks carefully at the sample and Bowen says that it is really amazing what he can glean from a simple visual examination.

“One of the things you can do is to count the annual layers,” Bowen explains. The annual snows record each year like the rings in a tree trunk. Lonnie can literally count back the years and know how old the core is down to a certain depth [at a certain depth the layers become too thin to count visually],” Bowen explains. “In one

case he actually counted back 15,000 years while he was on the mountain.”

Back at the lab, analysis of the layers and the minute air particle trapped within them tells the tale of shifting temperatures and changing atmosphere. His research has led Thompson to predict that tropical glaciers are in fact, disappearing. It is the rapid rate of this disappearance that drives Thompson to complete his work. Bowen relates Thompson’s views in this excerpt from that first article for *Natural Science Magazine*:

To him these vanishing records are an important key to understanding global climate change. “To be relevant you must work in the tropics,” he says. “They contain 50 percent of the earth’s land mass and 80 percent of the population. Their heat drives global weather. If a subtle increase in carbon dioxide raises their temperature even slightly, more moisture will enter the atmosphere. The greenhouse effect of the vapor will cause worldwide temperatures to rise significantly. Mark Bowen’s article “Thompson’s Ice Corp.,” appeared in *Natural History* in 1998.

GLOBAL WARMING

The second half of Bowen’s book explores the science and the complicated politics of global warming. It is, according to Bill McKibben in his New York Times review, “the best compact history of the science of global warming I have read.”

Bowen feels that everything in nature and in politics is getting “very fragile—very tippy as resources become scarcer and scarcer and the need for them grows with more and more people.”

I ask Bowen how he feels that American perceive their relationship to the environment and to nature.

“I think we are totally divorced from the natural world,” he says reflectively. “I think we have designed our economy around not perceiving it. The mind is divorced from the body.”

If this sounds like a guy with his head in clouds—why wouldn’t it? Bowen spends a part of his life at high altitudes and readily admits that there is something unearthly about it. “When you are in these visionary places on the tops of mountains, you have no doubt that these are power spots and they have a powerful and clarifying effect on the mind,” he says.

Bowen says that Thompson has some

of his best insights on top. “It’s kind of like direct experience—the way he has insight into his data,” he explains. “Lonnie’s intuitive skills are amazing. He made predictions about what he would find on Sajama and he was right. It was different than anything that had ever been seen.”

Like most environmentalists, Bowen is frustrated by the lack of urgency and attention surrounding climate change science. “People believe that there are no limits—that the idea that we may run out of things is just another philosophy, but I believe that it is coming back to hit us in the face.

He describes the cycle of human destruction, denial and greed that powers the rapidly advancing threat of global warming as a “materialistic drive.”

“It’s a basic misunderstanding about what makes people happy,” Bowen says. “This basic misunderstanding is what disconnects us from our neighbors and from the earth. It’s what divorces us from connectedness.”

With the publication of *Thin Ice*, Bowen makes a valuable and entertaining contribution to the literature about global warming and the science and spirit of Lonnie Thompson.

Through the murky window of glacial ice, Thompson has seen the distant past and foreseen the frightening future. Bowen’s *Thin Ice* takes the reader straight into “the thrill of the chase.”

doing” which was appealing to Bowen.

“The fact that I had been out in the real world doing real jobs made me good at it,” he says. “You have a task to accomplish, you’ve got a goal and you just have to reach that goal.”

CONVERGENCE

Lonnie Thompson was the perfect subject for a guy who loves the chase and appreciates hard work.

Thompson is known not only for his scientific findings, but for his determination, persistence and dedication in the field under extreme physical conditions. His intellectual perseverance in an often-critical scientific climate is legendary.

“The politics of climate change research can be just as challenging as the fieldwork,” Bowen states. “They will literally de-fund the research if science is coming up with bad news.”

For Bowen, Thompson displayed not only the essence of what it is to be a pure scientist, but a down-to-earth, practical nature and a sense of integrity that he found genial and admirable.

Amidst constant skepticism, Thompson continued to believe in his quest to recover ice core samples from tropical mountains around the globe and Bowen became his observer on three of his expeditions.

THIN ICE

Bowen’s book has won the admiration of noted environmental writer